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Two Lectures
ON
INJURIES OF NERVES.

Delivered at St. Bartholomew's Hospital on March 19th and 21st, 1902,

BY ANTHONY A. BOWLBY, C.M.G., F.R.C.S. ENG.,
JOINT LECTURER ON SURGERY.

LECTURE I.

Delivered on March 19th.

GENTLEMEN,—In commencing a brief description of injuries of nerves and their results I must remind you first of all that the effects of an injury of a nerve are out of all proportion to its size, and that, consequently, although only a very small punctured wound may have been inflicted on a patient's arm yet as a consequence of that the hand, or a great part of it, may be practically paralysed and useless. Hence it is that injuries of nerves assume a very much greater importance than the size of the wounds which inflict those injuries would give you cause to consider probable. I propose to begin by describing to you briefly what happens in the upper end of a divided nerve. In the first place, it is certain that after a nerve has been cut across the changes which take place in the upper end are primarily limited to that part of the nerve immediately above the point of section and the results of these changes are best seen in the nerves of a stump. When a person has had an amputation performed and you have an opportunity of examining the stump after the lapse of months, or possibly years, you find that the ends of the nerves are bulbous. That condition which you see in stumps is found in the upper end of every divided nerve. If you look at these specimens they will give you a correct idea of this condition of the proximal end. These bulbs were always supposed to be formed of fibrous tissue until 20 years or more ago it was pointed out that in them there are a large number of nerve fibres, and further investigation showed that these nerve fibres are young and that they have been formed in the distal end of this portion of cut nerve. They are not old fibres which are in a state of atrophy. The first effect, however, of cutting a nerve is that the extreme peripheral portion of the proximal end undergoes degeneration and it is only after this degeneration has been completed that a regeneration occurs exactly similar to that in the distal end, of which I shall say more directly. It is, then, after this degeneration that regeneration of the nerve fibres takes place, new nerve fibres being developed from the nuclei of the sheath or neurilemma. No other change takes place in the proximal end of a divided nerve if, within a reasonable length of time, an opportunity be given for the two ends to join together. But if, on the other hand, the nerve ends are not united, if they do not have the opportunity of coming together, and if the divided nerve fibres which are cut off from the distal muscles and skin do not have the opportunity of resuming their function, they afterwards undergo changes which at the present time are largely lost sight of but which are of the utmost importance in considering the question of secondary nerve suture. You know that it is a rule in pathology that a part which is not used undergoes atrophy. And this is true of nerves as well as of any other structure. The consequence is that the proximal end of the divided nerve undergoes atrophy in proportion as the fibres are cut off from the parts which they have hitherto innervated. The result is that after the lapse of years the proximal portions of the divided nerves gradually shrink in size, and it is probable that this shrinkage is associated with actual destruction of a certain amount of the nerve fibres and of the axis cylinders which are their essential parts. But something more than that happens, and it was pointed out many years ago that after amputation there ensue in the spinal cord changes which result in destruction and atrophy of some of the large motor cells in the anterior cornua. It is only to be expected that if these cells are separated from the muscles which they have been in the habit of innervating they also should undergo atrophy. But it is of much importance to recognise that changes take place as far up as the spinal cord; and changes such as the destruction of the large nerve cells in cases in which amputation has been performed are of the greatest importance to recognise. And it is believed, and is thought to have been proved by experiment, that exactly the same changes take place when merely a nerve has been divided and not only when the limb has been amputated. This has been proved in the case of animals by experiment, but as far as I know it has not been proved in the case of man; though it is probable that this atrophy of large nerve cells which undoubtedly occurs after amputations occurs also after mere section of a nerve, in cases where years have elapsed and the nerve has not rejoined.

We will now pass to a consideration of the lower end of the nerve. The immediate effect of section of a nerve is that the whole of the lower end undergoes both rapid degeneration and atrophy, so that ultimately the whole of the peripheral part of the nerve is destroyed. The immediate effect is, that within a very few days there is a destruction or breaking up of the myeline, which is commonly talked of as "segmentation of the myeline." The myeline, instead of forming a continuous sheath around the axis cylinder, collects in droplets here and there in the sheath. At the end of about three weeks the greater part of the myeline is broken up and taken away, and at the end of five or six weeks there is practically no myeline to be seen. Before this destruction of myeline is complete the axis cylinders also have begun to disintegrate and to break up, and in the course of a short time they are completely destroyed, so that at the end of five or six weeks the nerve in the whole of its peripheral part is reduced to its original fibrous tissue elements. There is the neurilemma sheath intact, there is the sheath of the nerve without the essential nerve elements, and that condition is one which you will find in every completely divided nerve within five or six weeks. What is not so clear is the next step after this. I have told you that in the lowest part of the proximal end of a divided nerve there is first of all this same degeneration, and that very soon there is the growth of a bulb and that this bulb contains newly-formed nerve fibres. Is there ever a bulb on the lower end of the nerve? No; there is not. There is no separate formation of nerve fibres at the cut end of the peripheral portion such as occurs in the proximal end. Next, Is there a restoration of nerve fibres in the peripheral end of the nerve apart from union with the upper end of the nerve? For many years it was believed, after Waller had shown that the section of a nerve was followed by its degeneration, that the only way in which new nerve fibres could grow in this peripheral end of a divided nerve was by an extension of pre-existing fibres from the upper end, which worked their way down in a corkscrew fashion and grew until they occupied the sheaths which previously had been occupied by normal nerve fibres but which were now empty in the peripheral end. That was mostly a theoretical explanation and was never really demonstrated. Afterwards, when the peripheral ends of these nerves came to be more carefully examined it was shown that, at any rate in many animals, there was the formation of nerve fibres of an imperfect character in the peripheral end, and something like 20 years ago I found this same condition in the nerve fibres of man. I will read you a brief extract of some lectures I delivered at the Royal College of Surgeons in the year 1887 and which I published in THE LANCET[1] and afterwards in a book on "Injuries of Nerves" as follows:—

> Chief in importance amongst the changes in the peripheral end is the regeneration which occurs even when no union has taken place with the proximal end. ..... In the case of a lad of 18 in whom an operation for re-union of a divided ulnar nerve was undertaken seven months after injury an examination of the peripheral end showed that scattered about a transverse section were several small imperfectly developed nerve fibres—smaller than natural, and their myeline sheath scarcely perceptible. ..... In the case of a woman, aged 53, who had divided the median nerve nine months previously, I found the circular spaces in the neurilemma occupied by nerve fibres in various stages of regeneration. The steps in the formation of these fibres could, moreover, be most clearly traced. Their first appearance was in the form of oval and spindle-celled nuclei which seemed to be identical in structure with the nuclei of the sheath. The next step was the elongation of the nuclei and their gradual transformation into fibres around which subsequently a myeline sheath was formed. ..... I have been unable to find that similar changes had been noticed by other investigators in cases of nerve section in man. The conclusions that may be drawn from the most recent investigations are: (1) The nuclei of the sheath of Schwann form the new axis by union; (2) the myeline is subsequently formed; (3) the peripheral end may become regenerated without forming any union with the proximal extremity, but that it again tends to regenerate if union fails.

[1] THE LANCET, April 30th, 1887, p. 863.

It is 16 years since these extracts were published, and ever since then the doctrine of the peripheral regeneration of nerves has been taught in this school. It has also been gradually adopted by almost all surgeons, for clinical experience of injuries in man was evidently in such a matter as this of much greater importance than any observations on animals could possibly be, and it was noticed, soon after nerve suture became part of surgical practice, that if you sewed together the two ends of a nerve which had been separated for several months, then, almost directly after the two ends had been brought together, and often within a few hours, sensation was restored. Now, it was evidently impossible that sensation could be restored by the joining together of an upper end which contained normal fibres and a lower end which contained no fibres at all. Therefore it was evident that the regeneration of the peripheral end must have proceeded to some extent in order that there might be fibres sufficient to carry any sensation within a few hours after nerve suture; for nobody could suggest that within these few hours newly-formed nerve fibres had extended along the whole length of the peripheral portion of the divided nerve. So that surgeons very soon came to accept as a truth, and almost as a truism, that the peripheral end of a divided nerve did regenerate independently of its union to the upper end.

The next thing to consider is, To what extent does it regenerate? It regenerates to a great extent, but never to the full extent without union with the proximal end. The new nerve fibres which I have mentioned as being found in the peripheral ends of divided nerves never attain maturity, they never grow to their fullest size, and I question if they ever grow to their fullest numbers without being joined to the upper end, and union with the latter also results in a much more rapid as well as a more complete regeneration.

The next point which we will consider is, Do these new nerve fibres also, as do the nerve fibres in the proximal end, undergo a second atrophy if they do not join the upper end, and if for years they are not used? I have no doubt that they do. I have no doubt that after regeneration, if union with the upper end does not take place, atrophy necessarily ensues, for it has been found that years after complete want of union the distal ends of divided nerves are extremely shrunken, and it has been proved that there is a time after which secondary suture of a divided nerve does not result in a great deal of gain. But I will say more about that point when we consider the question of treatment.

Lastly, we have to consider what happens between the two ends of the nerve. I have told you what happens in the proximal end and I have described in general terms what happens in the distal end. You have now to consider what occurs between the two ends. If the two ends are in close apposition there are formed new axis cylinders and new nerve tissues which unite the two ends, much as the permanent callus unites a fracture. And it is also possible for the ends to be united even though they are a little distance apart. I take it that if they are a considerable distance apart no useful union ever results. If they are an inch or more apart certainly no useful union ever ensues. But if they are at a distance of a quarter of an inch from each other a good deal of union may result, and surgeons know that in cases where they have divided sensory nerves upon the face with the intention that they shall not unite unfortunately there is a great tendency for them to unite, even although the ends are fairly widely separated. There is a tendency for sensory fibres, at any rate, to creep across an intervening space. I am afraid that there is no such tendency for motor fibres to do so to a useful extent, and consequently in many cases where mixed nerves have been cut, although there is some return of sensation even though the ends are not in close contact, there is, on the other hand, seldom any return of muscular power unless the ends are closely coapted.

Next let us turn to the further effects of injury of nerves. Let us go to the tissues which they supply, and first of all to the muscles. As soon as a nerve is divided the muscles which it supplies are immediately paralysed and they remain permanently paralysed if the nerve is not reunited at some time before complete atrophy and changes in the cord have taken place. The muscles that are paralysed undergo changes which are very similar to, and may be compared with, those which occur in the peripheral end of a divided nerve. They undergo rapid degeneration as well as atrophy; it is not merely that the muscular fibres, on account of not being used, atrophy, but that the muscular fibres, being cut off from their centres of innervation, rapidly degenerate, with the result that in a comparatively few weeks muscles which were formerly of good bulk are reduced pretty much to fibrous tissue. I will not trouble you with the details of the microscopical changes which take place in cases of section of motor nerves. But the result is very well seen in such a cast of the hand as I show you. It is still better seen in this photograph of the hand the ulnar nerve of which has been divided. Within a few weeks all healthy muscular tissue is gone. It is not merely that the muscle fibres get less numerous but that all the muscle fibres undergo degenerative change. True atrophy is really a diminution in size without alteration in structure; but here there are both atrophy and degeneration, an alteration in structure for the worse. Now, these muscles will not be re-made unless the continuity of the nerve is re-established. There can be no doubt about that. The independent regeneration, to a certain extent, of the distal end of a divided nerve may be considered to be a fact. But it is also a fact that a similar regeneration of the muscle does not take place. The next thing one is tempted to ask is this, Are those nerve fibres which you see regenerated in the peripheral end of a divided nerve, sensory fibres, or are they motor fibres? It is certain that the sensory fibres are regenerated in the peripheral end of a divided nerve independently of union with the upper end. To what extent are motor fibres regenerated? This question is forced upon us by the fact that, although there is a formation of new nerve fibre in the peripheral end of the divided nerve there are no corresponding regeneration and restoration of muscle. And it is impossible to prove whether these regenerated fibres seen in the distal end of a mixed nerve which has been divided are motor or sensory fibres, for there is no way of distinguishing a motor from a sensory fibre in process of formation, even under the microscope. My own opinion is that it is probable that the motor fibres do not undergo anything like the same complete, or nearly complete, regeneration that the sensory fibres do, and I think that clinical evidence supports this view.

Supposing that a nerve is divided and the muscles are paralysed and wasted, what clinical evidence is there of this condition? In the first place, there is loss of power, or paralysis. Next, there result in time certain deformities, and these deformities are due to one of two things—either to the weakness of the muscles which are paralysed, resulting in the parts being displaced by healthy muscles, as in the characteristic deformity after division of the ulnar nerve; or there may be actual shrinkage of the muscle, not only in its bulk and thickness but in its length. If it is allowed to shrink so that its ends are approximated and if a part like the hand or the wrist is kept in a position of flexion whilst the flexor muscles waste there will be deformity due to contracture of the wasted muscles and not deformity from displacement of the part by the healthy muscles. So that deformities may result either by the action of healthy muscles not being opposed by the paralysed ones or by the contraction and shrinkage of the atrophied muscles. And this condition is particularly liable to occur if a part is kept in such a position that the origins and insertions of muscles are approximated during this process of contracture.

Next, what evidence is there, clinically, that these changes are taking place? Further evidence is supplied by the reactions to electricity. Within two or three days of a nerve being divided the muscles that it supplies begin to lose their faradic contractility; from four to six days after division the muscles have actually lost their faradic contractility. Then with regard to galvanism the galvanic contractility is retained for a very much greater length of time. It may remain as long as from four to six weeks—in rare cases it remains for about two or three months; but after that lapse of time galvanic irritability is entirely absent and the muscles no longer react to galvanism. You have to be careful in estimating this condition, because if you are testing muscles in a part like the hand it is a little difficult to separate, by noting the electrical reactions, the muscles supplied by the ulnar from the muscles supplied by the median nerve, and consequently if you are not careful you find that the reactions are not as clear and definite as I have said they are. But what I have told you is a result of examinations of the muscles in cases of section of nerves a good many hundreds of times, and in all of them the muscles have been examined either by Dr. H. Lewis Jones or by his

predecessor Dr. W. Steavenson, both of them skilled electricians. I think, therefore, you may take it as certain that the statements which I have made are correct.

The next thing to consider is, Supposing that the divided nerve does unite reasonably soon, which returns first—motor power, or faradic irritability, or galvanic irritability? There is no doubt about that point. It is of importance to remember that voluntary power returns weeks, months, or even a year, before faradic and galvanic irritability return at all. That is a matter of considerable importance when you are examining a patient, for the first sign of restoration of muscular power and of the formation of new motor nerve fibres is not to be found by examining the muscle with faradism or galvanism. You will find that voluntary power will return first of all and that not until after the man has had the use of the muscle and it has been restored in bulk to a considerable extent will electrical reactions even begin to be restored. Faradic contractility generally returns before galvanic. That electrical reactions are so delayed is very curious, but still it is a fact and it is one of clinical importance. So whilst the electrical reactions are of great interest and use in estimating the extent of injury of a nerve and the amount of paralysis of muscle they are not of a corresponding use in estimating the return of power, because the return of power can be observed clinically and the patient himself is conscious of it long before electricity will give any indication that nerves have been restored or muscles re-made. I shall have something more to say about that in connexion with suture, but what I have given you are the elementary facts which you must grasp in order to understand the clinical application of them.

In addition to changes in the muscle there are changes which take place in other tissues supplied by nerves, for of course nerves supply all the different tissues. Let us take the hand. The nerves of the hand are so commonly injured and the hand is a part of the body of such immense importance that it is as well to study these conditions in this part of the body. Let us look at the skin. Here are paintings of the skin of both of the hands of the same patient. In the one the median nerve has been divided; in the other there is a normal skin. In the hand in which the nerve has been divided the fingers are thin and glossy, shiny and tapering. Notice that all the markings on the skin of the fingers are gone. The skin looks as if it had shrunk, as if it were tied down tightly and stretched upon the subjacent structures. This, indeed, is so. The skin is as shrunken and atrophied as it looks. Here is another hand which shows the same thing to a less extent. This next picture shows a patient in whom the left median nerve was divided some time previously. Here you see the characteristic tapering, shiny fingers and the other condition of skin which was described years ago by Sir James Paget under the name "glossy skin." This glossy, shiny, atrophied skin is very characteristic of many nerve sections. Sometimes the changes which take place in the skin are more pronounced even than that. Here are two pictures. In this left hand there is shown a change in the index finger after division of the median nerve at the wrist. You will notice that the skin is raw, that there has been desquamation of epidermis, and that as a result the whole of the finger is sore. Those are changes which are rare, but the shiny, atrophied skin is common. Now look at the next picture and see to what extent these changes may go. This shows the result of division of the median nerve and you see that the end of the index finger has completely ulcerated away and there is left the exposed tip of the necrosed phalanx. Patients who have these divided nerves are liable to have painless whitlows, for the part is insensitive, and these whitlows tend to cause destruction of the end of the finger and may result in necrosis of the phalanx. Not a few of these conditions are the results of injury to a part which is insensitive. A man came here with an open sore at the end of his index finger as a result of his having put it into the bowl of his pipe; he had pressed the burning tobacco down without noticing that he burnt his skin. Another man said that he burnt his finger by putting it against a stove but he did not know that he burnt it until after he had taken it away. In the same way slight cuts or tears are often inflicted upon these anæsthetic fingers without the patient being aware of the injury. Of course, a slight injury which causes no pain is liable to be neglected by the patient and the consequence is that a small sore place is not treated because it does not hurt, and so the result is that the sore place gets bigger instead of healing.

Now the nails are really appendages of the skin and it is quite proper to consider them in connexion with the skin. The nails in such cases as we are considering become very broken and fibrous; they are ridged and furrowed, altered completely in their texture. It seldom happens that a nerve supplying the hand is divided without there being, in the course of a few weeks or months, some changes in the structure and texture of the nails. In this case there had been division of the median nerve at the wrist some time previously, and you see that the nails are much more like birds' talons than ordinary nails; they are large, thick, curved, and fibrous.

The hair is another appendage of the skin. In many cases the hair atrophies like other structures, and so do the glandular tissues in the skin, the sebaceous glands and the sweat glands; and it is because of the atrophy of these structures that the part assumes this shrunken, shrivelled, glossy appearance. I take it that that condition of the skin which is talked of as "glossy skin" is not merely a result of change in the skin but of changes in the corresponding glands, indeed of all the constituent parts.

Lastly, we will consider the joints. The joints undergo changes which result in their becoming more or less stiff. They often have fibrous adhesions formed in them, and first of all they generally undergo an inflammatory change. If you look at the joints of the hand in a case where the ulnar or median nerve has been divided you will find soon after division that the joints are swollen and painful, and that afterwards, when the inflammation has passed by and the swelling has gone, they are left more or less stiff. This stiffening of joints is a matter of clinical importance, for if you do not recognise it and take care that the joints do not become stiffened, then in many cases the condition of the hand will be much worse than it need have been, for you can anticipate these changes and can, to a great extent, prevent deformities which might otherwise arise.

EFFECTS OF SUTURE.

And now we will consider what happens, supposing that as soon as a nerve is divided you suture the two ends together. Do those two ends ever grow together immediately so that none of these degenerative changes which we have been describing occur? No; it never happens. Unfortunately there is no such thing as the immediate and complete union of two ends of a divided nerve. I am not prepared to say that this may not take place to some slight extent, but that is a matter rather of theoretical than of practical importance. It is certain that after a nerve has been divided, even if you suture it within an hour, even if you divide it at the time of operation and suture it yourself within a few minutes of having divided it, you will not prevent most of the degeneration which takes place in the peripheral end. You may cause some diminution in that degeneration possibly and it may be that suture may prevent to a slight extent the degenerative changes which I have described, but unfortunately it certainly does not prevent the changes that take place in the muscles. They will still show the alterations of the electrical reactions, they will waste and they will degenerate. The same is true of the peripheral end of the nerve. It will atrophy and degenerate and new nerve fibres will have to be made. The consequence is that when you have to do with a patient who has a recently divided nerve, however carefully you suture it and however well the wound behaves you must expect, and your patient must be told to expect, that the motor function of the nerve will not be fully restored for about a year or more. Supposing that the nerve has been divided, that it has been sutured as carefully as possible, that the wound has run an aseptic course, and that all has healed well, which returns first, motion or sensation? Undoubtedly, sensation returns first. Sensation returns, and may become comparatively complete, months before there is the slightest evidence of the restoration of motor power. The muscles if they waste necessarily take time to be restored. The sensory structures do not take anything like the same time nor do they require the same amount of repair. The destruction of tissue in the sensory apparatus does not correspond with that in the motor and the consequence is that the muscular tissue requires so much longer time to be re-made that motor power is always later in returning than is sensation.

PRIMARY SUTURE.

Now a very few words about primary suture, which is best carried out as soon after a nerve has been divided as possible. In most cases it is best, in suturing a nerve, to pass at least

one suture, consisting of a material which will be absorbed, right through the nerve, above and below where it is divided. Personally, I think that the best material you can use is a tendon suture, generally quite a fine one, such as a split kangaroo tendon. I object to silk, because it remains as a foreign body in the nerve and causes the formation of fibrous tissue and consequently a lumpiness and hardness and tenderness in the sutured nerve. A tendon suture will last a long time and is strong and yet ultimately it will be completely removed. One suture is in many cases sufficient and causes quite enough coaptation of the parts. In a certain number of cases you may put one or two fine sutures in addition through the sheath of the nerve, but I think that, as a rule, these are not necessary. Having done this and put the part at rest on a suitable splint you have done practically all that operation can do to bring about union of the upper and lower ends of the nerve. After that the important thing is to keep the parts sufficiently long at rest and not to put a strain too soon upon the nerve which has been joined. Then there should be warmth, slight use of the part, massage, and galvanism. Warmth is undoubtedly useful. A paralysed part tends to remain cold and the more cold it is the more you may be sure that the processes of nutrition are impaired. Therefore warmth is distinctly indicated. Again, if a part is paralysed and cannot move of itself you will help its nutrition by massage, which will at any rate prevent some of the contracture of muscles and prevent stiffening of joints and will tend to move on the fluids in the tissues and in that way maintain to some extent their nutrition. Again, so long as there is muscle to galvanise the use of the galvanic current will at any rate give the muscle something to do and keep it moving and prevent a little its atrophying by disuse and will cause such muscular fibres as there are to contract. Warmth, massage, and galvanism are not indispensable, but they tend to keep the tissues supplied by the nerve in a more healthy condition.

Now, having cut across the nerve and sewn it together, what happens to individual fibres? Do they rejoin? Is it to be supposed that they re-unite so that the proximal end of a fibre rejoins the distal end of the same fibre? This is evidently impossible. No one supposes that the fibres in the peripheral part of a nerve twig which goes to the ulnar side of the little finger are going to seek out and join to the same fibrils in the proximal part with which they were previously continuous. I take it that it is certain that the proximal end of a nerve which went to the middle finger may join the distal end of the nerve which went to the thumb and—speaking of sensory nerves—that the nerves must get very much mixed up. As a matter of fact, the result is that at first, although the person can feel that he is being touched, yet he is not in the early stage able to localise exactly. For instance, you may touch a man's index finger in front and he may tell you that you are touching the back of his middle finger. Evidently the nerve fibres cannot be expected to join in the same position as that in which they were before the injury.

What about the motor fibres? That is a much more complex matter. The motor fibres also, no doubt, get mixed, and, when you come to consider it, it is evident that a good many motor fibres do not necessarily get properly joined up at all; and the result is, that though you may talk of successful union of a nerve, it is most likely that even in the most successful cases all the sensory fibres do not get joined up nor do all the motor fibres. As a practical result, surgically speaking, as far as your patients are concerned, there is evidence that even in these successful cases there is not that complete restoration of nerve tissue which would be implied in the term "cured." The patient is not usually cured completely, for the part is often not innervated as it was before the injury. But I shall have more to say about this in connexion with injuries of different nerves, for in certain nerves function is much more completely and rapidly restored than in others.

SOCIETY FOR RELIEF OF WIDOWS AND ORPHANS OF MEDICAL MEN.—A quarterly court of the directors of this society was held on July 9th. The President, Mr. Christopher Heath, took the chair. Two new members were elected, the deaths of three members were reported, and the resignation of a member was accepted. Fresh applications for grants were read from two widows and grants of £50 per annum were made. It was resolved to distribute £1342 among the 55 widows, 11 orphans, and five recipients from the Copeland Fund now in receipt of grants. The expenses of the quarter were £47 19s. 6d.

Five Clinical Lectures

ON

THE CAUSATION AND PREVENTION OF PHTHISIS.

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LECTURE III.[1]

GENTLEMEN,—To-day I propose to direct your attention to (1) the precautions which the individual should take in order to protect himself against phthisis and other forms of tuberculous disease, and (2) the measures which, in my opinion, the municipal sanitary authorities and the Government should take with the object of trying to reduce the prevalence of phthisis and other forms of tuberculous disease to the lowest attainable limit.

THE PRECAUTIONS WHICH THE INDIVIDUAL SHOULD TAKE IN ORDER TO PROTECT HIMSELF AGAINST PHTHISIS AND OTHER FORMS OF TUBERCULOUS DISEASE.

With this object in view the individual should endeavour: (1) to increase his "vital resistance" by maintaining his general health in the best possible state of efficiency; (2) to avoid all conditions likely to produce in the body, and more especially in the respiratory and gastro-intestinal tracts, the local alterations which form a suitable nidus for the development and growth or absorption of the tubercle bacillus and its spores; and *a fortiori*, if such alterations are present, to take means to allay and to remove them as speedily and as completely as possible; and (3) to prevent the introduction into the system of the tubercle bacillus and its spores—in particular (*a*) to avoid breathing air containing the tubercle bacillus or its spores, and (*b*) to avoid drinking milk containing living tubercle bacilli or their spores. These precautions are especially necessary in the case of persons who inherit a strong hereditary tendency to phthisis and tubercle; and still more essential in the case of persons who are obliged to live in close contact with persons suffering from phthisis.

During infancy and childhood special attention should be directed to the dietary and to the condition of the gastro-intestinal tract. Everything (such as unsuitable food, decomposing milk, dirty feeding-bottles, insanitary surroundings, or exposure to cold and damp) likely to produce irritation and catarrh of the gastro-intestinal tract should be carefully guarded against since such lesions form a suitable nidus for the development and growth of the tubercle bacillus and favour its absorption. If catarrhal lesions or diseased conditions are developed in the gastro-intestinal tract they should be allayed—treated and cured—as speedily as possible, for there seems reason to suppose that one of the reasons why the children of the poor suffer so much more frequently from tabes mesenterica and other tuberculous lesions, such as tuberculous meningitis, than the children of the rich is that (in consequence of their poverty, the insanitary nature of their surroundings, the careless way in which they are fed, and the unsuitable nature of their food) they are much more frequently the subjects of catarrhal and diseased conditions of the gastro-intestinal tract than children who are better circumstanced and looked after. Special efforts should also be made to prevent the introduction into the gastro-intestinal tract of tuberculous milk. During later childhood the same precautions should be maintained and special attention should be directed to the condition of the mouth and throat, since diseased conditions of the mouth and throat are apt to lead to the production of tuberculous lesions in the cervical and sub-maxillary glands and more distant organs, both by causing irritation of the cervical glands (i.e., by producing a suitable nidus for the development of the tubercle bacillus) and by favouring the absorption of the tubercle bacillus or its spores. During youth and adult life special precautions

[1] Lectures I. and II. were published in THE LANCET of July 5th, (p. 6) and July 12th, 1902 (p. 61), respectively.

should be directed to the condition of the respiratory apparatus. If the respiratory capacity is, in consequence of defective chest development, below par, it should be increased by suitable gymnastic exercises and special care should be taken to prevent the development in the respiratory tract of unhealthy conditions and catarrhal lesions; for it is during this period (youth and adult life) that phthisis is chiefly apt to develop.

Persons who inherit a strong tendency to phthisis should, with the object of preventing the development of it and other forms of tuberculous disease, be well fed, well clothed, and well housed; they should live, if possible, in a high, dry, and pure atmosphere, and in a well-built, airy, and well-drained house, which is not built on a cold and damp subsoil, which is surrounded by plenty of fresh air, and which is bathed in plenty of sunlight; they should have plenty of exercise and sleep; their bedrooms should be airy and well ventilated, they should make a practice in winter as well as in summer of sleeping with the window open (a few inches from the top is amply sufficient); they should avoid excesses of all kinds (alcoholic and other); they should choose an occupation or profession which does not necessitate the breathing of an irritating and dusty atmosphere (the mortality from phthisis amongst knife-grinders and stonemasons, for example, is very high), an occupation which is outdoor and active rather than indoor and sedentary. If their chest development is defective they should systematically practise lung gymnastics with the object of increasing their respiratory capacity; and they should be regularly weighed, for there is no better indication of variations in the state of nutrition than variations in weight. They should pay special attention to the condition of their digestive functions; they should drink plenty of (non-tuberculous) milk; they should eat, if they are able to digest it, a good deal of butter and fat-forming foods; and if their nutrition is below par they should take cod-liver oil in cold weather.

It is unnecessary to say that many of these prophylactic measures, the object of which is to maintain the general health in the best possible state of efficiency, to strengthen and increase the "vital resistance," and to prevent the development of those local alterations in the respiratory and gastro-intestinal tracts which form a suitable nidus for the development of the tubercle bacillus, or favour its absorption, can only be satisfactorily carried out by rich and well-to-do people. I have, however, detailed and emphasised them, since they are of the utmost importance, and since they should, so far as circumstances will permit, be aimed at and carried out in the case of the poor as well as in the case of the rich.

THE SPECIAL PRECAUTIONS WHICH SHOULD BE TAKEN BY HEALTHY PERSONS LIVING IN CLOSE CONTACT WITH PHTHISICAL PATIENTS.

Healthy persons who are obliged to live in contact with patients suffering from phthisis should be specially careful to carry out the individual precautions which have just been insisted upon. And it is important to emphasise the fact that many of the precautionary measures which are best fitted to prevent the extension of the disease to other (healthy) persons who are in close contact with the phthisical patient and also to the public at large (such as free ventilation, abundance of fresh air, the avoidance of overcrowding, plenty of sunlight, scrupulous cleanliness both as regards their own persons and their surroundings, the absence of dust and dirt, the destruction or disinfection of all discharges containing the tubercle bacillus, &c.), are also of the first importance to the phthisical patient himself—i.e., are amongst some of the most important measures which he should adopt with the object of promoting the cure or arrest of his disease and to prevent the further development of secondary tuberculous lesions in his own body. It is important to impress this fact upon the patients and upon the public; for many persons who will not adopt precautionary measures merely for the benefit of the outside public will adopt precautionary measures if they realise that it is for their own benefit and for the benefit of their wives and children that they should do so.

Persons living in close contact with phthisical patients should be scrupulously careful to take every means to prevent the introduction of the tubercle bacillus or its spores into their own bodies. The chief risk is the inhalation of air containing the tubercle bacillus or its spores and direct infection by kissing, using cups, &c., contaminated with phthisical sputum or other discharges containing the tubercle bacillus. The essential points are: to destroy the sputa or other discharges which contain the tubercle bacillus and its spores while they are still moist—i.e., as soon as possible after they are ejected by the patient—to prevent such discharges becoming dried and pulverised, to see that the rooms in which phthisical patients live and sleep are kept scrupulously clean, thoroughly well ventilated and, if possible, bathed in sunlight, so that the poison, if it should get into the atmosphere, may be freely diluted and destroyed by oxygen and sunlight.

The destruction and disinfection of the sputum or other discharges which contain the tubercle bacillus.—The phthisical patient must be instructed not to swallow his sputum. This is of great importance for the patient himself in order to prevent the development in the intestinal tract of secondary tuberculous lesions (tuberculous ulceration of the intestine). It is also of importance for his friends and relatives, for if diarrhœa the result of tuberculous ulceration of the intestine is developed the difficulty of destroying the poison is greatly increased and additional precautions against the extension of the disease to others are necessitated. In those cases of phthisis in which diarrhœa is developed the fæcal discharges should, immediately after their evacuation, be destroyed or disinfected, and any linen, bedclothes, &c., which are soiled by such discharges should be immediately disinfected or destroyed. In short, in cases of tuberculous diarrhœa, whether developed in the course of phthisis or any other form of tuberculous disease (tabes mesenterica, acute tuberculosis, &c.), the fæcal discharges should be treated in the same way as the fæcal discharges from a case of typhoid fever are treated—never allowed to become dry and pulverised, always disinfected or destroyed immediately after their evacuation, the nurses and attendants being scrupulously careful to wash their hands after attendance on the patient, before eating, &c. The phthisical patient should be instructed to expectorate into a vessel containing a disinfectant or into a pocket-handkerchief which can be destroyed (burnt) after being used (a handkerchief of Japanese paper answers well) and never on any account to expectorate on the floor, bedclothes, in the public streets, on the floors of cabs, omnibuses, tramcars, railway carriages, &c. In advanced cases of phthisis the patient and his friends should be instructed not to allow the sputum to remain dry on the lips, beard, moustache, &c. The phthisical patient should be instructed never to kiss any healthy (unaffected) child, or, in fact, any healthy person, and *vice versâ* healthy persons should not allow themselves to be kissed by persons suffering from phthisis. It is hardly necessary to say that this is one of the precautionary measures which will in many cases be evaded.

The rooms in which phthisical patients live should be kept scrupulously clean. No dust should be allowed to accumulate in them—the floors, walls, &c., should, from time to time, be rubbed over with a damp cloth. We have seen that the inhalation of dust tends to produce in the respiratory tract catarrhal and other conditions which form a suitable nidus for the development of the tubercle bacillus, and that the inhalation of dust which contains living tubercle bacilli or their spores is the chief means by which the tubercle bacillus is conveyed from one human being to another. This is another of the precautionary measures which in practice it is in many cases very difficult to carry out. Free ventilation is of the greatest importance: (1) for the health of the patient himself and of the other (healthy) occupants who live or work with him; (2) in order that the poison, if any pulverised sputum or other discharges should get into the atmosphere, may be freely diluted; and (3) with the object of destroying any tubercle bacilli or their spores which may be present in the atmosphere or in the dust on the walls, floor, &c., since an abundant supply of oxygen is destructive to the vitality of the tubercle bacillus. For the same reasons (for the health of the phthisical patient and the other inmates and with the object of destroying the tubercle bacillus) as much sunlight as possible is desirable.

Healthy and unaffected persons should not (if it can be prevented) sleep in the same room,[2] and should never sleep in the same bed, with phthisical patients. Overcrowding

[2] This statement does not, of course, apply to hospital wards, in which due precautions as regards ventilation, cleanliness, and the destruction of the sputa are carefully carried out.

of the rooms, houses, and workshops in which phthisical patients live and work should, as far as is possible, be prevented. If a phthisical patient should cough into the face of a healthy person, his nurse, or medical attendant, the healthy person should immediately blow the nose so as to clear out the nostrils and rinse out the mouth and throat with some disinfecting solution. All discharges from tuberculous cases (discharges from diseased bones, joints, glands, &c.) should be treated in the same way as the sputum—i.e., immediately disinfected or destroyed.

THE ADMINISTRATIVE CONTROL OF PHTHISIS.

The points to which the municipal and sanitary authorities should direct attention and the measures which they should employ with the object of reducing the prevalence of phthisis and other forms of tuberculous disease to the lowest possible limit obtainable with our present means of prevention are, in my opinion, as follows.[3]

General sanitary measures.—It may be laid down as a general proposition that anything which raises the tone and health of the individual, and of the community as a whole, increases the "vital resistance" against tubercle and therefore tends to protect the individual and the community against it; and *vice versâ* that anything which depresses the health of the individual or of the community as a whole decreases the "vital resistance" against tubercle and tends to favour the development and to promote the extension of the disease. Hence general sanitary measures are of the greatest importance in preventing the development of phthisis and other forms of tuberculous disease. The enormous decrease in the mortality from phthisis and other forms of tuberculous disease (tabes mesenterica apparently excepted) which has taken place during the past 45 or 50 years has without doubt been chiefly due to the great attention which has been paid to general sanitary measures and to the diminution of poverty, the cheapening of food, and the general advancement in the well-being and whole surroundings of the poorer classes. I shall not attempt to enter into details with regard to the general sanitary measures included under this head, but the following may be enumerated: the laying-out of the streets, the construction of dwellings, common stairs, workshops, &c., with special reference to providing sufficient air space both outside and inside, free ventilation, and, so far as it can be provided, a copious supply of sunlight, attention to drainage and the avoidance of damp, the cleansing of streets, alleys, courts, houses, workshops, &c., the removal of filth, dirt, dust, &c., the provision of an ample supply of pure water, the destruction and removal of insanitary houses, slums, &c., the suppression of nuisances, the prevention of overcrowding, &c.

As I have already pointed out, everything which tends to eliminate poverty, to promote the well-being, and to raise the moral tone of the community necessarily has an important influence in the prevention of phthisis and other forms of tuberculous disease. Further, it should be remembered that many of the general sanitary measures which improve the health of the community, since they remove the conditions (such as darkness, dampness, a deficiency of sunlight, and a deficient supply of oxygen) which favour the continued vitality of the tubercle bacillus and its spores outside the body, may be regarded as measures specially directed against tubercle. I repeat that everything which tends to promote the health and well-being of the community tends to prevent the development of phthisis, and *vice versâ* that everything which reduces the health and depresses the vitality of the community tends to favour the production of phthisis. Under the latter head the following conditions may be specified: poverty and destitution, deficient food, improper food, insufficient clothing, overcrowding, defective ventilation, rebreathing the expired air, darkness, absence of sunlight, dampness of dwellings, dampness of subsoil, defective drainage, the presence of dust, dirt, and filth, alcoholic or other excesses, and consequently a low moral tone of the community, &c. The removal of some of these conditions is not, of course, the duty of the municipal and sanitary authorities, but many of them hang more or less closely together, and the removal of the one—the sanitary defects—tends, at the same time, to the removal of the other—the moral defects, poverty, &c., and *vice versâ*.

Special preventive measures.—I shall now speak of the special precautions in the localities, workshops, houses, and rooms in which phthisical patients live and work. If general sanitary measures applied over the whole sanitary area are important means of protecting the healthy members of the community against phthisis and of diminishing the prevalence of the disease it is hardly necessary to point out that the same sanitary measures are of still more importance when focussed, as it were, on the points where they are most required—i.e., on the rooms, houses, workshops, and localities in which patients affected with phthisis live and work. Consequently, it is, theoretically at least, the duty of the municipal and sanitary authorities to see that the rooms, houses, and workshops in which phthisical patients live and work are not in an insanitary condition and that any obvious and marked insanitary conditions (such as great overcrowding, highly defective ventilation, the accumulation of dirt and filth, &c.) which predispose the healthy inmates to phthisis are, so far as this can be effected by the action or advice of the municipal and sanitary authorities, removed. It is also the duty of the municipal and sanitary authorities to do what they can to instruct the public, and especially persons suffering from phthisis and the healthy people with whom they are in immediate contact (their wives, families, &c.), as to (1) the nature of phthisis and tubercle, the channels through which the tubercle bacillus is introduced into the system, the conditions which favour the development of phthisis and tubercle, and the conditions which retard or prevent their development, &c.; (2) the importance of diligently and strictly attending to general sanitary conditions (ventilation, both of their day-rooms and bedrooms, cleanliness, avoidance of dust, the importance of an abundance of fresh air and sunlight, of good feeding, &c.), in order that persons affected with phthisis may, so far as their circumstances permit, place themselves in the best possible condition to promote a cure of their disease; and (3) the precautions which patients affected with phthisis should take to prevent the extension of the disease to the persons with whom they are in immediate contact and to the public generally. Under this head, in addition to the points which have already been indicated in the preceding headings, the following should be emphatically insisted upon: the paramount importance of disinfecting or destroying the sputum while it is still moist—i.e., as soon after it is ejected as possible; the inadvisability of a healthy person sleeping in the same room and the danger of a healthy person sleeping in the same bed with a patient affected with phthisis; the risk which a healthy person may incur from being kissed by a person affected with phthisis; the risk that a healthy person may run from drinking out of the same cup, using the same spoon (unless they should have been carefully and thoroughly cleansed or disinfected) as a phthisical patient; the advisability of boiling milk before it is drunk, &c.

There can be no question that the great interest which the public are taking in the whole subject of tuberculosis is a most hopeful sign and that the increased knowledge which they are rapidly gaining of the nature of phthisis will be of the greatest possible benefit in enabling the profession and the municipal and sanitary authorities to cope with the disease. Consequently it is the duty not only of the profession but of the municipal and sanitary authorities throughout the country to do everything that they can to instruct the public, and especially the poorer members of the community, as to the nature of the disease and as to the measures which should be taken in order to cure and to prevent it. The diffusion of such knowledge (by medical men, by nurses, by clergymen, by district visitors, and by means of printed instructions, leaflets, &c.) will enable the healthy (unaffected) members of the community to protect themselves against phthisis in the future in a way which, for want of this knowledge, they have not been able to do in the past; it will enable patients suffering from phthisis to put themselves in the best possible conditions, so far as their circumstances and surroundings will allow, for curing the disease and for preventing the development of secondary tuberculous lesions in the intestine, &c.; it will do much to enable patients suffering from phthisis to prevent the extension of the disease to their

[3] It must be distinctly understood that some of the measures which are suggested in the succeeding paragraphs, such as the compulsory notification of phthisis, the provision of laboratories for testing and reporting on the sputum, and the provision of hospital accommodation for dangerous cases of phthisis, are only suggested on the distinct proviso that a determined and vigorous effort is to be made to reduce the prevalence of the disease to the lowest attainable limit. Unless this is the object the large expenditure of money and the considerable sacrifices which they would necessarily entail, both on the part of the healthy and on the part of many patients affected with phthisis, would probably not be justified.

wives and families and to the public at large; and it will, in the course of a short time, so educate the public opinion that they will, I believe, not only submit, but, provided that they are convinced that such measures are essential and necessary, will cheerfully submit, to the measures and restrictions which the profession, the municipal and sanitary authorities, and the Government may think necessary to impose in order to reduce the prevalence of phthisis and other forms of tuberculous disease in man to the lowest attainable limit and, it is also to be hoped, in order to eradicate completely and to stamp out tuberculous disease in cattle.

The importance of early diagnosis and treatment.—And here let me emphasise the facts: (1) that, provided the proper measures of treatment are adopted, phthisis is, in its early stages, curable in a much larger proportion of cases than was at one time supposed; (2) that in its later and advanced stages it is, practically speaking, an incurable disease; and consequently (3) that it is of the utmost importance that the disease should be recognised in its earliest stages in order that the appropriate means of treatment may be employed in the earliest and curable stage of the disease, that effectual measures may be taken from the first to disinfect and to destroy the sputum; and that the places in which the disease is contracted may be located so that the rooms, houses, and workshops which are sources of infection (phthisical centres) may be disinfected and put into a good sanitary condition. It is essential to remember that early diagnosis and treatment are of great importance, not only for the patients themselves, but also for the healthy persons with whom they live and for the community at large. Every case of phthisis may (unless rigorous measures are taken to destroy and to disinfect the sputum) be a centre or source of infection to other people. Every case which is not cured in its early stages is apt to run on and consequently may be a centre of infection for months and it may be for years. Hence the great importance, not only for the patient himself, but for the healthy community, (1) that the disease should be recognised in as early a stage as possible and (2) that all cases of the disease should be placed in the earliest possible stage of their development under the best possible conditions to promote a cure.

The provision at the public expense of means of testing and reporting on suspected sputum, suspected milk, &c.—In the early stages of phthisis the diagnosis is often attended with considerable difficulty, and frequently the only means of deciding whether the case is one of phthisis or not is the detection of the tubercle bacillus in the sputum. Now, since the recognition of the disease in its earliest stages is of the greatest importance not only for the patient but also for the community it is, in my opinion, the duty of the municipal and sanitary authorities to provide means at the public cost for testing and reporting on the sputum of suspected cases of phthisis and on the discharges of other forms of suspected tuberculous disease. And since it is also, in my opinion, the duty of the sanitary authorities to determine whether milk is tuberculous or not, and to examine and report upon the discharges from suspected cases of typhoid fever, diphtheria, cholera, &c., every central municipal and sanitary authority throughout the country should provide a suitable laboratory, under the charge of a skilled bacteriologist and an adequate staff of properly trained and skilled assistants, for the examination of, and reporting on, such discharges (sputum, &c.) and foodstuffs (milk, &c.) or should make arrangements with existing laboratories for this purpose.

The necessity of providing sanatoriums for the treatment of early cases of phthisis.—Modern experience has shown that fresh air, sunlight, good feeding, and satisfactory surroundings are infinitely more important for the cure of phthisis than any form of medicinal treatment which has yet been introduced or devised; hence the necessity of providing in every community sanatoriums in which cases of early phthisis can be treated and cured. Now that the importance of the open-air treatment of phthisis is fully recognised rich people and those who are able to pay will take care to provide such sanatoriums for themselves, or rather, I should perhaps say, such sanatoriums will be provided in which phthisical patients who are able to pay will be received and treated. And it is highly desirable that such sanatoriums should also be provided for poor people. But, in my opinion, it is not the duty of the local sanitary authorities to provide such sanatoriums; that, I conceive, is the duty of the charitable public and of the Poor-law authorities. The sanitary authorities would not, in my opinion, be justified in spending the money of the ratepayers in providing hospital accommodation and sanatoriums for the treatment of cases of early phthisis, for, provided that proper precautions are taken to destroy and to disinfect the sputum, patients who are suffering from early phthisis are not dangerous to others. The cost of providing sanatoriums and hospital accommodation for all cases of early phthisis would be enormous, while the cost of instructing phthisical patients as to the necessity of destroying the sputa (and if it is thought advisable of taking means, so far as this is practicable and possible, of seeing that these instructions are carried out) would be comparatively small. As will be presently pointed out, phthisis differs from almost all of the other infectious and contagious diseases which are met with in this country in the important fact that the contagion can be thoroughly and easily controlled by the patient himself, at all events in the earlier stages of the disease. All that he requires to do is to destroy or to disinfect the sputa; consequently it is not necessary, so far as the prevention of the disease is concerned, to isolate cases of phthisis or to restrict the liberty of patients affected with phthisis, at all events in the early stages of the disease, always provided that they (the patients) are willing to employ the necessary preventive measures—i.e., to destroy or to disinfect the sputa. But while it is not essential to isolate cases of early phthisis so far as the prevention of the disease is concerned it is very desirable, both for their own sakes—with the object of arresting and curing the disease—and for the prevention of the extension of the disease to others, that cases of early phthisis occurring in the lower ranks of society at all events should for a time at least be placed in sanatoriums in order that the patients may be thoroughly taught the precautions which it is necessary to take with regard to the distribution of the sputum, &c., to prevent the extension of the disease.

The provision of hospital accommodation for dangerous cases.—But while in my opinion it is not the duty of the sanitary authority to provide sanatoriums for the reception of cases of early phthisis it is, I think, the duty of the sanitary authorities, either alone or in conjunction with the Poor-law authorities, to provide a certain amount of hospital accommodation for those patients affected with phthisis who, in consequence of their poverty, the nature of their surroundings (defective house accommodation), and the advanced stage of their disease (great debility, the presence of tuberculous diarrhœa, for example), are quite unable to take the necessary precautions to prevent the extension of the disease to others, and who may, therefore, be fairly regarded as distinct sources of danger to the community at large, and especially to the persons with whom they live in immediate contact.[4] Many poor patients who are suffering from advanced phthisis, who are too ill to work, and who have no adequate means of support, are only too glad to go to hospital; and as a matter of fact many of these cases are, at present of their own free will, admitted to our hospitals and infirmaries—where they die. This is, I conceive, one explanation of the fact (which at first sight seems curious) that in Edinburgh,[5] Dundee, and, I suppose, other large towns, more phthisical patients die in two-roomed than in one-roomed houses. The very poor—those who live in one-roomed houses—die, I suppose, for the most part in hospitals or poorhouses; the less poor—those who live in two-roomed houses—probably die in much larger proportions in their own homes. The migratory character of the very poor is probably also another cause of this difference.

[4] It is advisable, I think, that patients suffering from tuberculous disease of the intestine with diarrhœa, whose surroundings (house accommodation, nursing, capabilities, &c.) are distinctly unsatisfactory, should, if possible, be sent to hospital; for although not as dangerous as cases of typhoid fever, they are undoubtedly dangerous to the community in consequence of the difficulty of destroying and disinfecting the dejecta which contain the tubercle bacillus.

[5] The following table (copied from the report on Pulmonary Consumption of the medical officer of health of Edinburgh) shows the number of deaths from phthisis in Edinburgh during the period from Jan. 1st to Sept. 30th, 1898, according to rentals:—

Under £5...	24	£30 and under £40... ...	7
£5 and under £10... ...	125	£40 ,, £50... ...	7
£10 ,, £15... ...	97	£50 and upwards	11
£15 ,, £20... ...	70		
£20 ,, £30... ...	39		380

Note.—17 deaths of persons who died in public institutions or common lodging-houses are not included in the above.

I repeat that, in my opinion, it is desirable that the sanitary authorities, or the Poor-law authorities, or the sanitary authorities in conjunction with the Poor-law authorities (for, practically speaking, the cases of phthisis to which I am now referring are, in the great majority of instances, paupers or very poor people), should provide a certain amount of hospital accommodation for the reception, retention, and treatment of cases of this kind, for not only are their surroundings eminently bad but they are unable to carry out proper preventive measures and so are distinct sources of danger to the community. This may perhaps seem a "large order" but it is to be remembered that in the course of time, and probably in the course of a short time, provided that the adequate means are provided for the treatment of early cases and that vigorous preventive measures are efficiently and thoroughly carried out, the number of cases of phthisis (dangerous cases as they may be termed) requiring such hospital accommodation will diminish and the cost to the community, which for the first few years will be very great, will in the course of time become, comparatively speaking, small.

But, further, it is, theoretically at least, the duty of the sanitary authorities to see (so far as this is practicable and so far as such measures fall within the sphere of their action, but only in those cases in which the assistance of the medical officer of health is demanded by the medical man in attendance) that the preventive measures (for the destruction of phthisical sputum) are carried out—in other words, to see that the persons suffering from phthisis shall not be sources of danger and infection to the persons with whom they are in immediate contact and to the community at large. And this leads me to the next point, viz.:—

The special measures which the sanitary authorities should take in order to prevent the tubercle bacillus and its spores from being conveyed from one human being to another and from bovines to man.—We have seen that the two great sources of tubercle in the human subject are (1) the inhalation of dust containing the dried sputum from cases of phthisis; and (2) the introduction into the alimentary canal of food-stuffs (more especially milk) containing the tubercle bacillus and its spores; and that if the prevalence of phthisis and other forms of tuberculous disease in the human subject is to be reduced to the lowest attainable limit measures must be taken to prevent the inhalation of tuberculous dust, and the introduction into the alimentary canal of tuberculous milk and (though this is much less important) of tuberculous meat. This being so, it is, I conceive, the duty of the municipal and sanitary authorities and of the Government, if the assistance of the legislature is required, to take measures, so far as they are practicable, to prevent the tubercle bacillus or its spores from being conveyed (1) from one human being to another; and (2) from the lower animal—that is to say (practically speaking), from bovines to man.

With the object of preventing the tubercle bacillus or its spores being conveyed from one human being to another the sanitary authorities should take the following measures: 1. To instruct patients suffering from phthisis as to the necessity of destroying or disinfecting their sputum while it is still moist, as to the manner in which this should be done, and as to the danger which is entailed to the persons with whom they live and to the healthy members of the community by their expectorating on the floor, on the public streets, in workshops, public conveyances, &c. 2. To provide, when they are required, the necessary appliances for the destruction and disinfection of the sputum. 3. To see, so far as this is practical and so far as it falls within the power of action of the sanitary authorities, that any insanitary conditions which are present in the rooms, houses, and workshops in which phthisical patients live and work are removed. (This point has already been considered.) 4. To disinfect, or cause to be disinfected, on the death or removal of a phthisical patient, the rooms and houses which there is reason to suppose are contaminated with the tubercle bacillus. I do not mean to imply that it is necessary to disinfect every room in which a phthisical patient has lived, or every room in which a phthisical patient has died, but only those rooms which there is good reason to suppose are contaminated with phthisical dust. I repeat that if our object is completely to eradicate and to stamp out phthisis and other forms of tuberculous disease sanitary measures of a general kind are insufficient and that special measures must be taken to destroy or to disinfect the sputum of cases of phthisis and other discharges which contain the tubercle bacillus. Fortunately, there is no difficulty in destroying and disinfecting the sputum of cases of phthisis in individual instances provided that the nature of the disease is recognised, that the patient is properly instructed with regard to the destruction or disinfection of the sputum (or other discharges), and that these instructions are carried out. But, practically speaking, it is impossible with the means which are at present available to destroy and to disinfect the sputum in anything like the majority (it would perhaps be more correct to say except in a small minority) of cases of phthisis, for the disease is so persistent and so widely spread, it is so common, so much more common amongst the poor, ignorant, and careless members of the community, in whom the disease is often unrecognised in its earlier stages, since they do not in many instances seek medical advice until it is far advanced, and who, after the disease has been recognised, are in many instances either unable or unwilling to take the precautions which are necessary to prevent its extension to other people, and the individuals who are affected with phthisis and the houses in which they live are not known to the sanitary authorities. There will, I suppose, be little or no difference of opinion that great advantages would result from the measures which have just been indicated (1, 2, 3, and 4) provided that the sanitary authorities were in a position to carry them into effect. But without a compulsory system of notification the sanitary authorities are quite unable to carry them into effect. The compulsory notification of phthisis is, in my opinion, necessary and essential if a serious and determined effort is to be made to reduce the prevalence of the disease to the lowest attainable limits (see Lectures IV. and V.). 5. Further, if phthisis and other forms of tuberculous disease are to be reduced to the lowest attainable limit it is, in my opinion, theoretically speaking, advisable (though some of these measures may at first sight seem to be arbitrary) that the sanitary authorities should insist, so far as this is practicable, that the instructions which they issue regarding the destruction or disinfection of the sputum, attention to cleanliness, ventilation, and absence of overcrowding are carried out. 6. They should also enact by-laws to prevent phthisical patients from expectorating in the public streets, in public conveyances, &c. In New York and some other American cities this is, I understand, enforced; and in this country the sanitary authorities should, in my opinion, make by-laws for the purpose. 7. They should remove to hospital patients suffering from phthisis or other forms of tuberculous disease who, in consequence of the insanitary nature of their surroundings and their inability to take proper precautions, or their refusal to take proper precautions, to prevent the diffusion of the poison (the tubercle bacillus and its spores), may fairly be regarded as distinct sources of danger to the healthy persons with whom they are in contact and consequently to the community as a whole. (This point has already been considered.)

The measures which the municipal authorities, the local sanitary authorities, and the Government should take in order to prevent the tubercle bacillus and its spores from being conveyed from the lower animals, more especially bovines, to man.—This is a large and important subject which I do not propose to discuss in detail. Further, until Koch's view—that bovine tuberculosis is incommunicable to man, or very rarely, if ever, communicable to man by means of tuberculous milk and tuberculous meat—is definitely established or contradicted the detailed discussion of the restrictive measures, if any, which it is advisable and necessary to take in order to prevent bovine tuberculosis from being conveyed to man and in order to stamp out tuberculous disease in cattle is superfluous.

HOSPITAL FOR EPILEPSY AND PARALYSIS, REGENT'S PARK, N.W.—The annual meeting of the governors of this hospital will be held in the buildings of the new hospital, 4, Maida-vale, on Wednesday, July 23rd, at 3 P.M., when the Right Hon. the Earl of Hardwicke, president of the hospital, will preside. The first section of the new hospital is now nearly completed and will contain 38 beds and all the necessary administrative accommodation for the complete building which will contain 60 beds. A sum of £2500 is required to enable the committee to complete the fitting and furnishing of this part of the hospital, including the out-patient department.

SOME RARE CASES OF SARCOMA OF THE THYROID.[1]

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THE subject of this paper might appear on superficial consideration to be rather of academic than of practical interest, but the subject of malignant disease in any shape and form is essentially practical and if by calling attention to it the early diagnosis of malignant disease of the thyroid will be facilitated and radical treatment thereby obtained a great amount of suffering and a terrible termination to life may be averted, if permanent cure do not result.

Berry, in his excellent work on the diseases of the thyroid body, suggests that although sarcomata may appear to be equally common as carcinomata of the thyroid, yet it is probable that more cases of sarcoma are recorded in literature or placed in museums on account of their greater rapidity of growth rendering them a more striking affection and that consequently carcinoma may be really the more frequent. In Charing Cross Hospital during the past six years we have on record one case of carcinoma, one of malignant adenoma, and four cases of sarcoma of the thyroid.

The four cases that I wish to record this evening confirm the statement that most cases of malignant thyroid are unfortunately seen at too late a stage for radical treatment. Extirpation was possible in one only and this case indicates clearly the uncertainty of diagnosis and prognosis and the difficulty of removing the disease once it has become extracapsular. In one case tracheotomy was performed. Malignant disease of the thyroid is said to be more common in glands which have been the seats of previous non-malignant growths. This may be correct generally but there is no definite history in either of these cases to suggest the presence of any form of simple growth and in only one of the four cases was there a probability of any previous disease of the thyroid and this was not of the nature of a growth. In this case a preceding pathological condition may be assumed, inasmuch as there is a possibility that the patient suffered to a slight extent from myxœdema for some time before the malignant disease was observed. This, however, is a moot point, as it is not improbable that a diffuse form of sarcoma may have existed for some time, resulting in the destruction of the essential elements of the thyroid and loss of function, with myxœdema following as a logical sequence. The disease generally affects males and females equally and the proportion is retained in this instance, two of the patients being males and two females. It is more common in districts where goitre is endemic. During the later years of their lives these four patients lived at Barkfield in Kent, Lewisham, Greenwich, and Wandsworth respectively, none of which districts are, I believe, goitrous. The onset of malignant disease of the thyroid is late in life. Berry, in his investigations, limits practically its earliest appearance to 40 years of age. In these four cases the ages were respectively 57, 59, 60, and 69 years. The two younger patients were males, the two older were females. The patient who was 60 years of age had the symptoms of myxœdema and the one who was aged 69 years had the affected lobe extirpated. The histological varieties of sarcoma found in the thyroid are either spindle- or round-celled; in three of the following cases the cells were round and of medium size. In the fourth the structure was that of a giant-celled sarcoma. The duration of life in malignant thyroid is variable, from nine weeks to two and a half years being the limits, although in those cases grafted on to pre-existing simple growths the date of origin of malignancy is uncertain and its duration may be considerably longer. These four cases terminated fatally in eight, nine, 12, and 17 months respectively from the period of earliest observation of the growth, and being primarily malignant the history is fairly accurate. The immediate cause of death in each case is recorded as follows. The first patient died suddenly from heart and respiratory failure five or six hours after tracheotomy; the second from syncope on the day upon which he was prepared for tracheotomy; the third five days after extirpation, from exhaustion; and the fourth from general suppurative peritonitis, pleurisy, and pericarditis. The sarcomata grow more rapidly than do the carcinomata.

The seat of origin of sarcoma.—Whether one lobe is more prone to involvement than the other I cannot say, but the isthmus is the least frequent site of origin. Sarcoma generally is more prone to involve one lobe and to grow rapidly; carcinoma early to involve the second lobe and to grow more slowly. Of these four cases three were primarily in the right lobe; of these one appeared in the mid-line but was clinically, and at the operation obviously, a growth of the right lobe. In the fourth case the growth involved both lobes simultaneously but grew more rapidly in the right lobe, so that in all four cases the right lobe appeared to be selected by preference. Involvement of lymphatic glands is variable and is too late to be of diagnostic value; in three cases the cervical glands were involved and palpable, but when they became the seat of new growth it is impossible to say. In the fourth case—the (?) giant-cell sarcoma—no secondary glands were found.

Secondary growths.—In the earliest case, although the primary growth was most extensive and involved the walls of veins, the fasciæ, and the pleura, no embolic deposits were found. In the second case extensive secondary growths were found involving the dorsal and lumbar vertebræ, both kidneys, both suprarenals, the cœliac and cervical lymphatic glands, and the stomach. The last will be referred to later. In the extirpated case secondary growths were found in both kidneys and the cervical and thoracic glands were involved. In the fourth case, that with co-existing myxœdema, there were malignant ulcers of the stomach and intestine, malignant infiltration of the pancreas, and the cervical glands were involved.

Deviation of the trachea.—In three of these cases deviation was not marked, such slight deviation being the usual condition found in malignant disease. The greatest was one inch. In the fourth case—the (?) giant-cell sarcoma—the deviation of the trachea from the mid-line was two inches. Pain was not a prominent sign in either of these cases; two patients complained of slight neuralgic pain situated in the neck and radiating up towards the ear and down towards the chest. Dysphagia and dyspnœa were present in three cases.

Ingrowth into the trachea.—This is comparatively common and takes place usually from one-half to an inch below the cricoid cartilage. In the second of these cases the larynx had been invaded and the mucous membrane was ulcerated. In the fourth (the myxœdematous) case there was distinct infiltration of the submucous tissue of the larynx and the trachea. This extended for a distance of one and a half inches and resulted in a fusiform elevation; it extended above and below the cricoid and seemed to have enveloped, if not to have destroyed, the cartilage. There was no obvious loss of tissue—i.e., ulceration—over it.

The consistence of sarcoma generally is softer than is that of carcinoma of the thyroid. One of these cases was described as stonily hard, one as firm and elastic, and the other two as hard.

Complete fixation of the mass to deep structures was found in three cases.

The carotids.—In two cases the carotids were embedded in the growth. In the third case the vessel lay at the posterior border. In the fourth case the vessel lay at the outer border, below the growth.

CASE 1.—The patient, a man, aged 57 years, who was admitted to hospital on Oct. 25th, 1895, suffering from a tumour in the neck and was operated upon on the following day, died suddenly on the day of operation. The history of the case showed that during the winter of 1894, not more than 12 months previously, the patient noticed a lump of the size of a small marble which was situated behind the right sterno-mastoid at the junction of the lower and middle thirds. This disappeared in March, 1895 (at about the fifth month), and it returned in April, since when it had gradually increased in size. It had been painless and free from tenderness. In May (the seventh month) the patient began to have dysphagia for fluids; there was no difficulty in swallowing solids. In August (the tenth month) solids were taken with difficulty and this was accompanied by the onset of hoarseness. The dysphagia gradually increased, the hoarseness remaining more or less the same. Two weeks before admission the patient began to regurgitate food

[1] A paper read before the Harveian Society of London on March 6th, 1902.

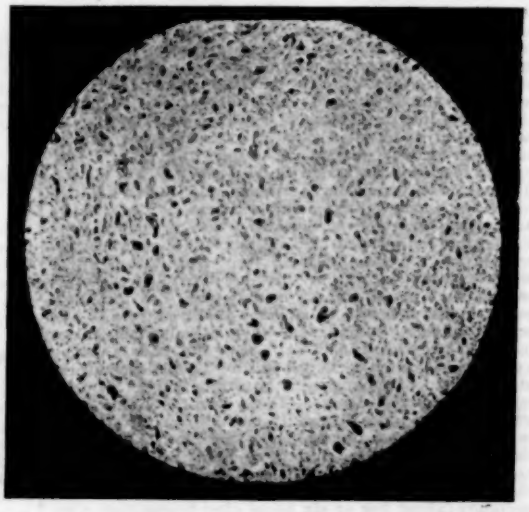
shortly after taking it, but he did not feel nausea. He had lost flesh during the last six months. The patient had to recline or to sit up in bed, being prevented from lying down by a sense of threatened asphyxia. His expression was painful and distressed. He coughed frequently. The respirations, which were of a sighing, laboured character, were 28 and the rate of the pulse, which was small and weak, was 133. The patient was given two or three teaspoonfuls of beef-tea which were disposed of with great effort. About three minutes later, without difficulty or nausea, he regurgitated the beef-tea unchanged. This was repeated several times and on each successive occasion the beef-tea became increasingly mixed with mucus. The fifth time mucus composed the greater part of the regurgitated fluid and was markedly acid. On examination the abdominal wall was found to be emaciated and retracted. No tumour was felt and the liver was not enlarged. Pulsation was felt along the whole course of the abdominal aorta. A large mass was seen on the right side of the neck, measuring from four to five inches vertically and from five to six inches transversely. It extended from an inch to the left of the mid-line in front to within two and a half inches of the mid-line posteriorly. Above it reached as high as the base of the lower jaw; below it reached the clavicle and it projected about two inches above the normal surface of the neck. Numerous large veins ramified in the skin over the growth, but otherwise this was not obviously changed. On palpation the skin was found to be not hotter over the tumour than elsewhere but it appeared to be markedly thin and more or less adherent over the growth. The mass was absolutely fixed to deep structures and was stonily hard in all parts. There were no soft spots nor was fluctuation found anywhere. The thyroid notch was felt two and a half inches to the left of the mid-line; the trachea was consequently considerably deviated but was difficult to palpate (obscured by growth), and it appeared to lie near the mid-line, just above the supra-sternal notch. Mr. Boyd decided on immediate tracheotomy and the operation was performed at 3 P.M. on Oct. 26th. A 5 per cent. solution of cocaine was freely injected in all directions over the position of the trachea. An incision two and a half inches long was made from the lower border of the thyroid cartilage in a position two inches to the left of the mid-line, several bleeding points were secured, the fascia over the trachea was divided and the latter exposed, and three rings were cut. A bi-valve tracheotomy tube was inserted by means of a gum-elastic catheter used as a stylet. The patient felt no pain; the injection of cocaine was repeated several times during the operation. He was considerably relieved, the dyspnœa was markedly diminished, and he was comfortable. The patient died suddenly during the night from respiratory paralysis.

At the post-mortem examination the patient was found to be sparsely developed and emaciated. There was a large growth in the neck especially involving the right side; it weighed 15½ ounces. The growth extended from the first rib upwards for five and a half inches, its depth below the first rib was four inches, its breadth was two inches, and its antero-posterior diameter was three inches. It was lobulated, convex anteriorly and posteriorly where it was attached to the spine. It blocked completely the right inlet of the thorax and was pale in colour, soft and brain-like in consistence, and had the appearance of a sarcoma. It was firmly adherent to the anterior aspect of the lower cervical vertebræ behind the œsophagus. It involved the right lobe and isthmus, extending well over to the left side of the trachea without implicating the left lobe of the thyroid. The trachea had been greatly pushed over to the left side and in order to reach it the portion of growth in front of the trachea had to be cut through. The growth was closely attached to the trachea. The œsophagus lay between the tumour and the trachea; both the œsophagus and the pharynx were involved in the growth, especially the latter, the wall of which was atrophied. The œsophagus must have been greatly pressed upon throughout the entire length of the growth. Inferiorly the mass extended into the upper division of the thorax four inches below the level of the first rib. It lay in concert with the apex of the lung but did not involve its substance. It involved the right subclavian vein in its course from the first rib to the innominate. It extended downwards over the arch of the aorta, involving the innominate and carotid vessels. The left vagus was deeply embedded in the growth. With regard to the heart there was no coarse lesion except one or two points of atheroma at the base of the aorta. There was no other disease of the viscera. The patient had an ununited fractured patella. On looking at the cut surface of the growth a central circular area was seen which presented the appearance of carcinoma, while the greater portion of the periphery showed the solid homogeneous appearance of sarcoma.

The following are points of interest in the case.

1. As to the histological appearances, sections showed under the low power an arrangement of cells which in parts immediately suggested sarcoma, there being little or no stroma and the cells were closely approximated and of fairly uniform size, but in other parts one would be led to diagnose carcinoma. Here there was a stroma consisting of degenerating fibrous tissue and round cells of a sarcomatous nature, throughout which were scattered, but not uniformly, a large number of what might be called giant cells (Fig. 1); these were of irregular shape and size, and were more or less angular and showed evidence of nuclear proliferation, vacuolation, and cell-inclusion (Fig. 2). In a small minority only of the cells the nuclei were multiple and discrete (Fig. 3); the majority presented imperfect nuclear proliferation. Were these cells of that variety which is generally called giant cells of new formation? Or were they simply clusters of thyroid epithelium aggregated and compressed so that the protoplasm surrounding the nuclei appeared to form one mass? The great variety in size, shape, and distribution of the cells and the character of the nuclei suggested the latter possibility. On the other hand, comparison with the imperfect giant cells of a growth removed by Mr. Morgan from the subcutaneous tissue of the forearm of a youth in November, 1900, where no such epithelial cells could possibly exist, rendered it possible that they were not of thyroid origin. Multi-nucleated giant-celled tumours growing in structures unassociated with bone have been recorded on numerous occasions. Some of these have been described as carcinoma but the great majority as sarcoma. Waring[2] has described a tumour which grew in the subcutaneous tissue of the neck which contained cartilage cells and showed cell inclusions but was probably, as he suggested, derived from some displaced embryonic osteo-genetic tissue associated with the clavicle. H. Snow, Targett, and others have recorded giant-celled tumours which have grown in the subcutaneous tissue

FIG. 1.



Case 1. Low power. Showing the giant cells interspersed in the fibrous and round-celled stroma.

[2] Transactions of the Pathological Society of London, vol. l.

of the integuments and in the breast. I show a section of the growth removed by Mr. Morgan, also one of a giant-celled sarcoma recently removed by Mr. Stanley Boyd from the breast of an elderly woman, aged 60 years, in which the giant cells show distinct multiple nuclei. This patient (Case 1) was 57 years of age and most of Targett's cases were elderly subjects. He says that giant cells are seen in malignant tumours which have grown rapidly and are soft in structure. This thyroid tumour clinically was very hard but post mortem it was described as being soft and brain-like. It is probable that, as in the case of cysts, the hardness was due to tension, and as the tumour was of rapid growth and Mr. Boyd's "breast case" also showed recent very rapid increase in size Targett's statement is not negatived by these cases. Mr. Morgan's patient was a youth. At the meeting of the Clinical Society of London on Feb. 28th, 1902, Mr. G. R. Turner showed giant-celled sarcoma growing from the synovial membrane of the ankle-joint, and at the same time I had the opportunity of seeing a section from a case recorded by Mr. Howard Marsh of a pedunculated sarcoma growing from the under aspect of the patella. In both these cases the cells were perfect myeloids, but their origin is closely associated with bone-forming tissues.

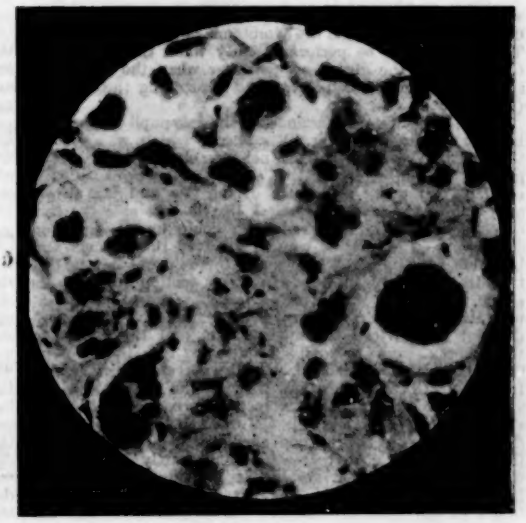
2. What was the cause of the dysphagia for fluids which set in first and which was not accompanied by signs of nerve involvement such as aphonia? The dysphagia for solids which occurred three months later was accompanied by hoarseness, showing probably direct involvement at the latter period of one recurrent laryngeal nerve. Post mortem there was a note that the left vagus was deeply embedded in the growth; it was obvious from the specimen that the right vagus and recurrent laryngeal nerves were involved. It is possible that the early dysphagia for fluids was mechanical, the fixation of the pharynx and larynx preventing the necessary movements, while the later dysphagia for solids was due to mechanical obstruction by pressure upon the œsophagus, aided perhaps by paresis of the muscles due to increasing involvement of the vagi and recurrent laryngeal nerves. Or was the early dysphagia of nervous origin and the later of superadded mechanical origin? That this sequence is probable is shown by the fact that towards the end persistent and rapid regurgitation of both solid and fluid food occurred.

3. It is questionable whether the small tumour first seen and which disappeared for about a month was not an adenoma which moved about freely.

CASE 2.—The patient, a married man, aged 59 years, was admitted to hospital on Feb. 28th, 1898, and he died on March 10th. It was ascertained that a sister of the patient had died from cancer, the site of which was not known. Eight months previously to admission the patient first noticed two hard lumps, one on either side in the region of the thyroid lobes. He rubbed them with hartshorn and thought that for about three weeks they got smaller. After this they began to increase in size; the right side had always been bigger than the left. There had been only slight neuralgic pain in the neck. The swelling on both sides had grown in a backward direction. Since the onset of the swelling the patient noticed a considerable accumulation of mucus in the throat. During the last fortnight the growth became half as big again as it was before. On admission the patient, who was a big powerful man, complained that he had lost flesh lately. His breathing was very audible and tubular. He could not swallow solids and his voice was slightly husky. There was an enormous swelling in the neck occupying the right side, the centre, and to a less extent the left side, of the neck, and extending from the jaw to the sternum. It involved both triangles. The consistence of that portion of the swelling on the right side was uniformly elastic but it did not fluctuate. Fixation to the adjacent parts was absolute. The skin on the right side was hot and congested but it was not tender or œdematous. The skin on the front of the neck and on the left side was unaltered. Along the posterior border of the sterno-mastoid was a chain of enlarged glands. The left border of the mass corresponded to the posterior border of the left sterno-mastoid, but the swelling on this side was far smaller than was that on the right side. Swallowing even of sops and fluids was difficult, but this varied. In an ophthalmological examination by Dr. W. C. Bosanquet nothing pathological was found. Laryngological examination was carried out by Dr. F. Willcocks. The patient did not elevate his epiglottis in phonation; there was much swelling of the epiglottis and the arytenoids. The vocal cords were not visible. The superior orifice of the larynx was compressed laterally. Mr. Morgan did not consider the patient sufficiently distressed to need tracheotomy for some time after admission. Dyspnœa and dysphagia increasing, however, the patient was prepared for operation but he died suddenly from syncope.

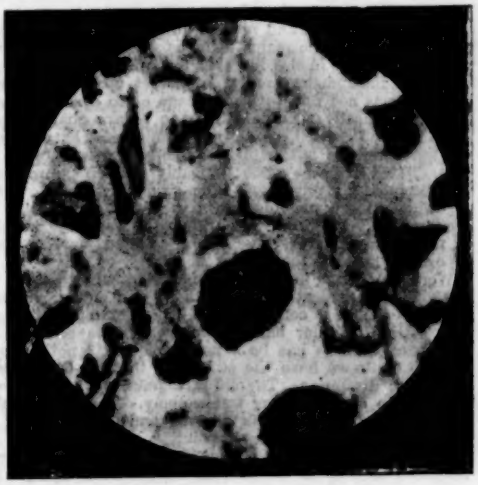
That tracheotomy should be delayed until the dyspnœa has become a source of considerable distress to the patient is the teaching of those who have had experience of these cases, as once the incision is made septic changes in the

FIG. 2.



Case 1. High power. Showing a giant cell with vacuolation and cell inclusion.

FIG. 3.



Case 1. High power. Showing a giant cell with nuclei arranged circumferentially.

growth and the complications following tracheotomy are very prone to occur. Palliative operations such as partial excision for relief of pressure symptoms should be undertaken only when there is great probability that the skin incision will completely heal or when the symptoms of distress are great. Tracheotomy may be performed early when there is danger of œdema of the glottis occurring or when the growth is slow and the tumour can be avoided in reaching the trachea. (*Vide* Semon's case.)

At the post-mortem examination the left pupil was seen to be larger than the right. The neck, which was greatly thickened by growth, was 21 inches in circumference. The growth was adherent to the skin on the right side; it extended up under the angle of the jaw and was firmly adherent to the cervical fascia. On the left side the line of cervical glands, much enlarged, could be distinguished separately. The thyroid growth involved the isthmus and both lobes. The right lobe and isthmus could not be distinguished as such, the left lobe on section retained its shape, though it was much enlarged. There was slight ulceration of the laryngeal mucous membrane. The growth did not extend into the mediastinum and the glands in the thorax were normal. There was no pressure on the veins. The left carotid, with the nerves, was embedded in its sheath; in the growth near the bifurcation the vagus nerve was tightly involved and compressed. The right carotid was lost in the growth. In the lower dorsal region a large secondary growth springing from the vertebræ projected forwards and partly surrounded, without involving, the aorta. It extended between the laminæ backwards and several secondary nodules were found in the muscles behind. The spinal cord was not affected although the growth was very near it. There was a large mass of growth in the glands behind the cardiac end of the stomach; this was adherent to, and growing through, the stomach wall near its cardiac orifice and was fungating in the cavity. The growth involved half the circumference of the wall of the stomach near the cardiac orifice; part of it had ulcerated and it presented a hæmorrhagic appearance. About the middle of the stomach was a small ulcer with raised firm margins of the size of a sixpenny-piece. Both kidneys contained new growths. The largest, which weighed eight and a half ounces, was in the left kidney; that in the right weighed seven and a half ounces. Both suprarenals were involved by solitary growths, the largest occupying the whole of the left capsule. The liver and spleen were congested but there were no new growths. The lungs were not diseased.

The points of greatest interest in the case are the following. 1. The association of ulceration of the stomach and intestine in sarcoma of the thyroid in this case and in Case 4. The condition of the stomach I will refer to in discussing Case 4. 2. The signs of hyperæmia and the post-mortem evidence of attachment to the skin show how closely the latter may be involved and yet resist perforation. It is possible that the heat and redness of the skin might be due to involvement of the sympathetic, as suggested by Agnew; the rapid increase in size, however, towards the end, suggests that some inflammatory reaction was set up. The increase certainly was not due to hæmorrhage or to cystic degeneration. Clinically no note was made of eye changes, yet probably such existed, as an ophthalmological examination was made and the left pupil post mortem was stated to be more dilated than the right; probably the left sympathetic was becoming involved. 3. The secondary growths were exceedingly large and numerous; they were also median or symmetrical. Rolleston states that the vascular medulla of the suprarenals is more often affected by secondary deposits of sarcoma than of carcinoma.

Were the lumps first noticed simple growths irritated by the vigorous application of hartshorn and undergoing sarcomatous change in consequence? This is extremely improbable. On the other hand, spontaneous disappearance of malignant growths has been not infrequently noticed and in Case 1 also we have the statement that the first growth seemed to disappear. Thyroid sarcomata have shown great decrease in size following tracheotomy. The very notable case recorded by Sir Felix Semon[3] and that recorded by Mr. G. R. Turner[4] are cases in point.

CASE 3.—The patient, a widow, aged 69 years, who was admitted to hospital for swelling of the neck on Feb. 1st, 1900, was operated upon on the 3rd. Death took place on the 8th. The patient had had no children and had been a widow for four years. She had suffered from chronic bronchitis. Nine months previously her attention was drawn to the swelling by a shooting pain extending into the top of the left breast and up to the right side of the neck into her ear. The swelling was in the mid-line of the neck low down and had extended upwards gradually. It had grown more rapidly during the last few months. The swelling itself was painless. For some time she had had a "funny" sore-throat and complained that it hurt her to swallow her spittle but not food. She did not complain of unusual dyspnœa but obviously her breathing was not easy and natural even while she was at rest. On admission the patient was found to be a fairly healthy-looking woman for her age and had a good colour but was rather thin. The urine contained a little albumin. Occupying the lower part of the neck and extending from the sternal notch below, upwards to the level of the thyroid notch in the mid-line was an oval swelling of the size of a goose's egg. It lay obliquely and occupied chiefly the right side but it extended well beyond the mid-line into the left anterior triangle. The skin and veins over it appeared to be normal. On palpation the swelling was found to have a smooth surface except at its upper right lateral angle; here it terminated in a blunt point like the lateral lobe of the thyroid. On this were small masses, probably enlarged glands which caused it to be irregular at this part (? glands pushed into prominence). The growth did not appear to affect the isthmus and the left lobe was normal. In consistence it was firm and elastic, like a deep-seated thick-walled cyst. The right sterno-mastoid was stretched over the swelling but the inner edge of the muscle stood up clearly on bringing it into action. The infra-hyoid muscles could not be demonstrated. The trachea was pushed towards the left side from three-quarters of an inch to an inch beyond the mid-line. The right carotid artery was pushed backwards into the posterior triangle and could be easily felt pulsating behind the sterno-mastoid. The growth was not freely moveable but did not give the impression of being very fixed to surrounding parts, but it was firmly fixed to the trachea and moved with it on deglutition. The larynx was normal and the cords moved perfectly; the voice was unaltered. The patient did not complain of dyspnœa but she certainly breathed rapidly and with obvious effort. Dysphagia was not present except when the patient wished to swallow her spittle. She had coughed considerably since admission but she attributed this to chronic bronchitis. There was not much expectoration. Under the anæsthetic Mr. Stanley Boyd revised his diagnosis thus: "The evidence of deep cyst is very doubtful. Against malignancy is the smooth circumscribed surface and outline, the absence of dysphagia and of interference with the recurrent laryngeal nerve. In favour of malignancy is the short history, the patient's age, the fixation to the trachea, and the prominence of glands at the upper angle." Yet after Kocher's angular incision was made and the growth bared it appeared "as a pale, slightly bossy, circumscribed, encapsuled mass, it looked like an adenoma and I endeavoured to enucleate it, but could find no inner capsule of thyroid tissue so determined to extirpate it." Great difficulty was experienced in removing the growth which extended deeply into the thorax. A continuous chain of glands was seen. Into the cavity which was left in the thorax after the removal of the growth air was being freely sucked. A doubtful nodule of growth was observed in the cut surface of the portion of isthmus left. The wound was drained. The prognosis was grave. After the operation the patient was in a very precarious condition. Next day surgical emphysema developed and the patient appeared almost comatose until she was given a brisk purge (on the assumption that the condition was uræmic), which entirely dissipated the symptoms. She did not pick up at all after the operation and died on the fifth day.

I think the interest in this case lies in the following points. 1. The deceptive clinical appearance and signs. The growth appeared to be encapsuled, oval in shape, and in consistence it appeared even to such an experienced surgeon as Mr. Stanley Boyd to suggest the probability of a deep-seated thick-walled cyst, and it was moveable on deglutition. The carotid artery, instead of being overlapped and surrounded, as is usually the case in malignant thyroids, was pushed backwards and could be felt easily at the posterior border of the growth. The patient appeared to be in good general health and her signs and symptoms might all be

[3] Transactions of the Royal Medical and Chirurgical Society, 1893.
[4] Transactions of the Clinical Society of London, 1890.

attributed to chronic bronchitis. Under the anæsthetic a revision of the diagnosis was made, yet after incision the growth on its anterior aspect showed a pale, slightly bossy, circumscribed, and encapsuled tumour. It appeared to have traversed its capsule on the posterior aspect which is probably accounted for by the fascial arrangements. That malignant growths of the thyroid tend to extend backwards in a marked manner has been clearly indicated by the cases which I have seen. The extreme difficulty with which the growth was removed shows how great may be the fixation to surrounding parts and yet allow up-and-down movement with deglutition. I should, personally, in future, lay more stress on lateral movement with the trachea. 2. The drowsiness noticed after operation was similar to the condition in the case recorded by Mr. G. R. Turner, previously referred to, in which after the operation the patient was comatose until a brisk purgative had acted. This patient was albuminuric likewise. 3. The surgical emphysema. 4. It is interesting to note that in Case 2 both suprarenals and kidneys and in this case both kidneys were symmetrically involved in secondary growths.

CASE 4.—The patient, a married woman, 60 years of age, was admitted to hospital on April 24th, 1901, for tumour in the neck. She died on May 14th—the twentieth day. The urine had a specific gravity of 1015, was acid, but contained no albumin or sugar. The patient had suffered from bronchitis every winter and she also had asthma. There was no history of goitre, of cancer, or of myxœdema. She had been treated for dyspepsia and constipation during the past 12 or 15 months. In October, 1899—that is, 17 months before admission—the tumour was first noticed; it appeared to have commenced on the left side in the position of the left lobe of the thyroid. It then seemed to involve the right side and had increased greatest on the right side. The husband of the patient said that when the fulness of the throat was first noticed the patient's skin began to be very dry and she developed progressive weakness. Her speech was always slow and she was rather stout but not to the extent now observed. The consistence of the swelling was not noticed. Six months previously the right side began to increase rapidly in size and the growth steadily persisted. It was accompanied by an increase in stoutness. She was seen at this time by Dr. G. H. Charlesworth of Wandsworth who at once diagnosed myxœdema. When she was admitted on April 24th, 1901, the neck looked very thick—that is, it was broad, full, and "expressionless"; there were no elevations or depressions visible. This fulness was most marked on the right side. On palpation a large tumour was found to occupy the neck which was more prominent on the right than on the left side. It obscured the trachea and was hard and solid and had distinctly defined margins, but the fulness of the neck extended beyond these margins. The carotid on the right side seemed to lie posteriorly and deep to the swelling. On the left side it was palpable at the outer border. The skin was free from attachment and except for a dark pigmentation where the patient had been painted and blistered with iodine it seemed normal. The mass was adherent to the deep parts and was very fixed. It did not move on deglutition. The trachea was deflected a little to the left but palpation was difficult. It could be felt in the mid-line below. The thyroid cartilage was easily felt in the mid-line but was not visible, being obscured by fulness. The lymph glands were enlarged and of firm consistence and were easily felt on the left side but less easily on the right side above the level of the growth. The patient had the characteristic appearance of myxœdema—i.e., subcutaneous thickening, double chin, puffy eyes, and swollen hands. She was slow of comprehension and speech; the latter was drawled. All her movements were slow, the voice was peculiarly harsh, thick, and of deep tone. The skin was dry, harsh, and coarse. Her hair was scanty but the scalp was uniformly covered. She was placid if left alone but was easily irritated. It was said that her voice had become harsher during the previous six months and that her breathing had become shorter; she complained of the latter considerably, but there was no obvious dyspnœa when she was at rest. Her temperature on admission was about normal. During the night she had some dyspnœa. She was put on Burroughs and Wellcome's thyroid tabloids which were gradually increased to five or more tabloids a day. She was being kept under observation to see the result of thyroid feeding and was considered to be inoperable. On April 28th her breathing had been variable in frequency and ease. She had considerable expectoration and so was given an expectorant mixture. Her temperature was 98° F. On the 29th the cough was worse. She was more cyanosed, complained of difficulty in drawing her breath, and was much less comfortable. The pulse was rapid and feeble and she had some sibilant rhonchi. On the 30th after a distressed, restless night she complained of pain in her throat of a shooting character and was given chloral. When seen on May 6th it was ascertained that the patient had felt and shown no ill effects of the thyroid extract. There was less œdema of the fingers and hands, the nose was less swollen, the face had improved, and the speech was clearer and more rapid. The dyspnœa, on the whole, was getting worse and especially affected her at night, so she slept badly. There was little or no cyanosis. The pain in the throat occurred now and again. The cough was variable. Examination of the larynx revealed no evidence of paralysis of the vocal cords and the breathing was not stridulous. The expectoration was less and the temperature continued about normal. On the 9th the dyspnœa was still well marked. The patient was restless and she felt more comfortable when lying on her right side. Speech and intellect were better, the puffiness about the eyes was less, the face was thinner and more natural, and the neck was probably slightly smaller, especially about the left lobe. On the 11th—the seventeenth day after admission—suddenly, without obvious cause and without a rigor, the temperature rose to 102° and subsequently to 104°. The patient had slight diarrhœa, the dyspnœa became well marked, and the skin pallid. She felt very ill but could not say how. She completely lost her appetite and although considerable improvement had been made as regards the myxœdema she rapidly got worse. The thyroid extract was discontinued. The temperature continued at 104° and then gradually fell. The pulse became thin and feeble ranging from 130 to 160. Slight delirium developed at night. A marked shrinking occurred in the size of the tumour. The neck became quite slim and except for a localised swelling on the right side the growth seemed to disappear. She occasionally complained of pain in the abdomen and always persisted in lying on her right side, slightly propped up. She did not vomit and after the first day of fever her bowels did not act. Her condition for the last three days of life may be summed up as follows. The temperature was 104°, falling to 101°; there were intense restlessness, marked dyspnœa with pallor and cyanosis, a thin, thready pulse, varying from 130 to 160, and slight pain in the abdomen; there was no vomiting; she was constipated; she was conscious but was too distressed to speak much about herself and at night she became a little delirious; most of the subcutaneous thickening and the thyroid fulness seemed to disappear suddenly; there was no suspicion of pelvic trouble and no signs of secondary growths were observed. She died on the twentieth day after admission.

Post-mortem examination showed the right lobe of the thyroid to be involved in a mass of new growth but the left lobe appeared to be normal. The trachea was narrowed by the growth and was pushed to the left side. The growth extended above to beyond the hyoid bone and below to within one and a half inches of the bifurcation of the trachea and measured four inches vertically. Anteriorly the isthmus was thickened and was continuous with the new growth in the right lobe. The right carotid and jugular were almost completely surrounded by new growth at the postero-external angle, the vein lying external. The bifurcation of the common carotid was involved in new growth. The subclavian could be separated from the growth but the lower end of the carotid was very adherent. The right half of the cricoid cartilage was embedded in new growth which had extended into the submucous tissue, forming an elevation of a fusiform shape one and a half inches in extent reaching above and below the level of the cricoid. There was no evidence of ulceration over the swelling. The growth lay in a retro-tracheal position, extending from the level of the tip of the epiglottis to the subclavian artery. The larynx was compressed from the right side and behind. The left lobe was firm and looked very fibrous, there was a mass of pigmented glands at the bifurcation of the trachea, and considerable tracheitis was present. Examination of the thorax showed purulent pleurisy on the right side and serous pleurisy with flakes of lymph on the left side. In the cavity of the pericardium there were flakes of lymph. The heart was normal. The lungs were compressed but were otherwise normal. The cavity of the abdomen was full of greenish-yellow, turbid, purulent fluid.

The stomach.—An ulcer twice the size of a florin lay near the cardiac orifice of the stomach and near it were

two smaller recent ulcers with raised thickened edges. There was no thickening of the wall of the organ. Near the pyloric end was another recent ulcer of the size of a sixpenny-piece, also two large chronic shallow ulcers, one of the size of a five-shilling-piece.

Intestines.—Two or three small sharply cut ulcers existed in the middle of the ileum. The mucous membrane of the lower part of the small intestine was stippled with dark dots throughout. In the neighbourhood of the cæcum and throughout the colon the mucous membrane was almost black with closely set points of pigment. The ureters contained much muco-purulent fluid. In the Fallopian tubes was a small amount of pus. The kidneys were slightly granular. The spleen was normal. The mucosa of the intestine examined microscopically showed masses of brownish pigment deposited between the glands; there were no hæmatoidin or hæmatin crystals. Microscopically the pancreas showed infiltration by new growth.

The points of interest in the case are (1) the direct association of myxœdema with sarcoma of the thyroid and (2) the ulceration of the stomach and intestine. The most interesting feature is the association of myxœdema with sarcoma of the thyroid.

Quoting Dr. G. R. Murray,[5] "in only a few exceptional cases has the destructive lesion of the thyroid gland been traced to a definite cause. Kohler describes two cases, one of syphilis and the other of actinomycosis of the thyroid. Neudorfer gives one case of adenoma of the right lobe of the thyroid. In each of the three cases appropriate treatment of the exciting cause was followed by recovery of the functional activity of the thyroid gland and disappearance of the myxœdema." Assuming that Dr. Murray has collected all the cases bearing on this subject this case appears to be an exceptional one.

It is impossible to state whether the myxœdema, of which clinically there is no doubt, was due to sclerosis or to senile atrophy of the gland antecedent to the malignant change, or whether a diffuse sarcomatous infiltration was the immediate cause of the glandular destruction and consequently of the myxœdema. The history states definitely that the development of the symptoms of myœdema, with one exception, that of slow speech, was coincident with an enlargement of the thyroid which became slowly progressive. When a marked increase in the size of the thyroid took place six months before death the symptoms of myxœdema also became more pronounced. Senile atrophy as a cause of myxœdema is rare. Clinically it was observed that thyroid treatment seemed to result in diminution in size of the left lobe. This may be best explained by assuming disappearance of the mucinoid deposit in the tissues about the thyroid, as microscopically there is no evidence of regular gland structure in any of the sections of the left lobe which I have examined; everywhere there is the diffuse infiltration with round cells; here and there may be seen remains of thyroid epithelium identical with the condition of the right lobe.

The condition of the stomach.—In this case marked ulceration of the stomach and slight ulceration of the small intestine with pigmentation of the latter were found. In Case 2, besides the massive involvement of the cardiac extremity of the stomach by the secondary growth in the cœliac glands, there was separate ulceration of the stomach near the pyloric extremity similar to that in Case 4. In a case not yet recorded of probably primary sarcoma of the larynx with bilateral growths in the thyroid there was found similar ulceration and new growth in the stomach. This association of ulceration of the stomach with thyroid sarcoma may be a coincidence but there are many points in favour of a direct relationship. Primary and secondary sarcoma of the stomach may be of four varieties: (1) round-celled, (2) spindle-celled, (3) myosarcoma, and (4) angeio-sarcoma. Primary growths are much more common than are secondary ones except in the lympho-sarcomatous variety in which *secondary* involvement of the stomach is more common than is *primary* deposit (Hemmeter) and is most often found secondary to primary growths involving the neck, the pharynx, the gums, &c. Primary growths tend to be nodular and begin in the submucosa. Ulceration of the mucous membrane is late and signs and symptoms may be entirely absent, the post-mortem examination revealing the presence of growth for the first time.

In the two cases now recorded what is the nature of these ulcers? In Case 2 the nature of the large ulcer was indubitable—viz., that of an ulcerating sarcoma. The smaller ulcer presented the same macroscopical characteristics as those in Case 4 and the small ulcer of the laryngeal case referred to. The latter is microscopically undoubtedly sarcomatous, so we may assume that the nature of the ulcers in Cases 2 and 4 is similar. Macroscopically those in Case 4 appear to be of two varieties, one having the appearance of acute ulcer, the other chronic with thickened edges. There was slight thickening with increased vascularity at the base of some of the ulcers but not of all. Microscopically the more acute ulcers showed a condition of erosion of mucous membrane surrounded by round-celled infiltration in the mucosa and submucosa impossible to distinguish from an inflammatory process. The area of ulceration appeared to be more vascular than did other portions of the stomach walls. If the brownish flocculent fungating portion of the new growth projecting into the stomach in Case 2 be brushed off the ulcer left is identical in appearance with the small ones seen in Cases 2 and 4. Probably at one time these had fungating growth adherent to their surface. The patient in Case 4 was for some time under treatment for dyspepsia and constipation, but her symptoms were not marked and there was no obtainable history of hæmatemesis. The duration of her symptoms seemed to have been coincident with the thyroid troubles. Extensive ulceration of the stomach may occur with few symptoms, yet it might be assumed from the condition of pigmentation of the intestine in this case, if due to blood absorption, that considerable hæmorrhage from the stomach had occurred from time to time, but the history did not support the assumption. Also the pigmentation was absent in the upper jejunum and was least marked in the lower jejunum and the upper ileum and most pronounced in the lower ileum and the colon. It is reasonable to assume that a great deal of the blood came from the intestinal ulcers, situated half-way down, one of which had probably ulcerated deeply and eventually perforated, causing general peritonitis.

The origin of the ulcers.—In Case 4 from the appearance and situation of the primary growth it is obvious that the pharyngeal muscles were involved by the new growth at their origin from the cricoid. In Case 2, from the extensive nature of the growth, a similar conclusion must be deduced. The larynx also was *ulcerated* slightly. In the unrecorded case of primary sarcoma of the larynx with ulceration of the stomach referred to the explanation which I beg to give of the origin of these ulcers suggests itself—namely, that it is probable that some of the sarcoma cells were swallowed and passing through the mucous membrane of the stomach and the intestine gave rise to secondary submucous growths. In my cases the pharyngeal mucous membrane need not have been perforated to permit this as cells of at least equal size constantly escape in the process of inflammation and probably under normal conditions also between the epithelium of mucous membranes. In addition in Case 4 there was involvement of the larynx which might be a possible source of sarcoma cells. Thursfield[6] recorded a case of primary sarcoma of the stomach in which the infiltration was diffuse and ulceration was not present. In this case there was a mass in the region of the parotid and left thyroid. Was the stomach growth primary? The association of secondary lympho-sarcomatous growth in the stomach with primary lesions of the gums, the pharynx, and the neck, recorded on repeated occasions, suggests that some such simple explanation as I have suggested is probable.

In conclusion I will quote Kocher and Berry.

Kocher: "Every goitre in an adult and especially in an elderly person that enlarges without obvious cause, should raise a suspicion of malignancy, even though it should cause no pain or other trouble. If at the same time the goitre becomes harder and irregular and symptoms of increasing distress set in, then the diagnosis becomes almost certain. The prognosis as regards malignant goitre from the operating point of view is not worse than that of innocent goitre if performed while the growth is intracapsular. When the growth is still intracapsular there are no means by means of which we can make a certain diagnosis of malignant disease."

Berry: "When, however, in the thyroid gland of a person over 40, a tumour appears which is hard, which steadily and rapidly increases in size, and which is not of an inflammatory nature, the malignancy of such a tumour should be strongly suspected. If, moreover, the surface of the tumour is irregular and bossy and if there is likewise dysphagia and pain in the neck, shooting up to the side of the head or to the shoulders, then the diagnosis becomes almost a certainty."

My thanks are due to Mr. Morgan and to Mr. Stanley Boyd

[5] Diseases of the Thyroid (1900), p. 33, on the Etiology of Myœdema.

[6] Transactions of the Pathological Society of London, vol. lii., 1901.

for permission to record these cases, to Dr. Bosanquet for much assistance and advice, and not least to Dr. Hunter for great assistance and permission to utilise the perfectly mounted specimens of the cases.

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ON THE

ACETONE SERIES OF PRODUCTS IN CONNEXION WITH DIABETIC COMA.

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(Continued from p. 66.)

THERE are two views of the pathogeny of diabetic coma which stand in a position to claim consideration. The one refers it to an acidosis or excessive production of acid and the other to the β-amidobutyric acid, an assumed precursor of the β-oxybutyric acid.

Excessive proteid disintegration is attended with excessive acid production. The sulphur and phosphorus of the proteid becoming oxidised give rise correspondingly to sulphuric and phosphoric acids. Under natural circumstances these acids encounter a sufficiency of fixed bases to neutralise them, but when developed in excess they have to attach themselves to a portion of the ammonia at the same time developed by the proteid disintegration and in this state they pass into the urine. Normally the amount of ammonia in the urine is very small, inasmuch as what is developed by downwards metabolism combines with the carbonic acid at the same time being produced and the combination becomes transmuted into urea. Combined with sulphuric or phosphoric acid the ammonia cannot pass into urea but escapes as the unaltered compound. Thus from simple increased tissue breaking down a source exists for the undue presence of ammonia in the urine and when the breaking down is attended with the formation of the additional acids, oxybutyric and diacetic, that have been receiving consideration, ammonia is appropriated and carried off by them into the urine, and thus the amount may rise from something under one gramme per diem to six or seven grammes or even more. The quantity of these acids that may be formed is such as to constitute a factor from more than one point of view of much significance. Estimations of diacetic acid are not given, for no satisfactory method of estimating it exists, but it must be reckoned that whatever diacetic acid is present means an addition to the troubled state otherwise induced. As regards oxybutyric acid it is not uncommon for from 50 to 70 grammes per diem to be eliminated. It is accepted that as much as 150 grammes per diem may be eliminated and considerably higher figures than these have been named (e.g., 226 grammes—approximately half a pound—by Külz), but doubt of the correctness of the extreme figures that have been given may be entertained. From the records supplied cases have occurred in which the oxybutyric acid has exceeded in amount the sugar. The waste occurring in these circumstances must be something enormous. The elimination of oxybutyric and diacetic acids constitutes an outgoing of material carrying with it unexpended energy and the same applies to the sugar. Hence with all three an immense sacrifice of potential energy is occurring.

"Acidosis" is the term which has been applied to the state resulting from the production of these acids. As they reach the blood they must obviously tend to decrease its alkalinity. The available fixed alkali, as already stated, is first appropriated for neutralisation and when the supply of fixed alkali fails the effete ammonia from proteid disintegration is taken and accompanies the acid into the urine. Notwithstanding these sources for neutralisation it has been found in cases when coma has supervened that the alkalinity of the blood has become reduced to a point standing much below the normal.

In the circumstances mentioned we have a sequence of events holding, it may be considered, a thoroughly established position. The existence of such a source of acidity cannot do otherwise than, by its influence on the constitution of the blood, act deleteriously. The altered constitution of the blood due, as in the "alimentary" type of diabetes, to the presence of sugar unaccompanied with any other condition interferes with nutrition and recognisably damages the kidney. Experience shows that where sugar is allowed to be passing for a long time through the system a certain amount of albumin appears in the urine and granular and hyaline casts become discoverable. This condition may go on for a long time in, as it were, a quiescent form and without any of the classical phenomena of Bright's disease becoming developed, although sometimes, whether incidentally or derivatively, well-marked Bright's disease, with the concomitants belonging to the granular kidney type of it, becomes established. When the acidosis state is added to the other, kidney damage, indicated by moderate albuminuria with granular and hyaline casts, may with greater certainty and rapidity be looked for. Indeed, if marked acidosis exists I think it may be said that albumin and casts may be expected to be found in the urine.

I now come to the pathogeny of diabetic coma, and, as I have said, there are two views to which attention will be given. These are autotoxicosis from acidosis and from β-amidobutyric acid.

As far back as 1877 it was found by Walter[1] that when hydrochloric or phosphoric acid was given in repeated full doses to rabbits a state comparable to that existing in diabetic coma was induced. The heart's action became much increased in frequency, the breathing forced, deep, and more frequent, like what is appropriately termed the "air-hunger" breathing of diabetic coma, and the animal passed into a stupefied state. It was noted also that the carbonic acid in the blood dropped from about 24 to 2·5 and 3 per cent., a condition that has since been found to agree with that observable in connexion with diabetic coma. Further, when the rabbit was on the point of death in coma the injection of carbonate of soda restored it. At the time when these experiments were performed the acidosis associated with diabetes had not been recognised, but from its suggested existence it was looked for,[2] and in the course of a few years the presence of oxybutyric acid[3] was discovered. It was in this way that the acidosis associated with diabetes was worked out, and whether it supplies the true explanation of diabetic coma or not it is found that with the supervention of coma the acids are present in the blood in such quantity as to be not far remote from covering its alkalinity. With this condition, as in the experimental acidosis, the amount of carbonic acid in the blood drops. Figures as low as 3·3 per cent. were noted by Minkowski[4] in a case during the existence of coma. Three weeks previously in the same case they stood at 17 per cent. For comparison he mentions, quoting from the work of another authority, that 30·6 per cent. may be given as a representation of the normal amount present in arterial blood of the human subject.

By the advocates of the acidosis theory as an explanation of the production of diabetic coma it is considered that when the acids developed begin to fail to meet with bases to neutralise them a condition is reached productive of coma. The effect of the administration of carbonated alkali in the circumstances agrees with that observed in experimentally induced acidosis and soda has been frequently employed as a measure of treatment with, in some cases, temporary restoration from coma. Instances of the kind stand on record but the final issue has been disappointing. The bicarbonate of soda is the preparation that has been used, and very large doses have been found necessary to be given, so large, indeed, as to create a difficulty in putting the treatment into force. Magnus-Levy[5] relates a case in which a boy, aged 13 years, was twice brought out of coma by the administration of 200 grammes (a little over seven ounces) of the bicarbonate of soda. In another case recorded by Magnus-Levy[6] the patient, a girl, aged 12 years, recovered from fully-developed coma under the administration of 100 grammes per diem and showed no further signs of coma during the nine weeks she subsequently remained in hospital. Notwithstanding, however, that success may be thus for a while obtained, in the end coma supervenes which fails to be any longer susceptible of removal.[7] This is not to be wondered at looking at the circumstances

[1] Walter: Archiv für experimentelle Pathologie und Pharmakologie, 1877, Band vii., p. 147.
[2] Stadelmann: Ibid., 1883, Band xvii., p. 419.
[3] Minkowski: Ibid., 1884, Band xviii., p. 35. Külz: Zeitschrift für Biologie, 1884, Band xx., p. 165.
[4] Mittheilungen aus der Königsberger medicinischen Klinik, 1888, p. 174.
[5] Archiv für experimentelle Pathologie und Pharmakologie, 1900, Band xlii., p. 130.
[6] Ibid., 1901, Band xlv., p. 399.
[7] Naunyn: Diabetes Mellitus, p. 328.

actually existing. It is true that, besides the neutralising action which is the main purpose of the treatment, the elimination of oxybutyric acid is greatly increased, but the production of the acid which constitutes the real fault to be dealt with remains untouched.

Writers speak of the altered constitution of the blood by the reduction of its alkalinity as the cause of the coma connected with acidosis and refer the result to the effect of the altered condition of the blood on the tissues of the body. This, however, amounts only to an assertion which gives no insight into the actual pathogeny of the coma. If we bring the mind to bear upon the matter an explanation becomes opened out which carries us to the depths of physiological action and shows the precise *modus operandi* in relation to the question. In effect the acidosis state, if looked into, is seen to offer an impediment to the performance of an indispensable functional operation connected with the vital activity of the tissues—I mean the removal of the carbonic acid developed in them as an attendant phenomenon of life. By the train of reasoning to be brought forward we arrive at finality in connexion with the matter.

The blood, as we know, conveys oxygen to, and carbonic acid from, the tissues. It is in the tissues that oxidation on the one hand and production of carbonic acid on the other takes place, the process constituting what is termed the "internal respiration." The oxygen is conveyed in loose combination with hæmoglobin and is taken by, and embodied in, the living protoplasm where in reality the chemical interactions of life occur. The oxygen thus embodied does not, it is considered, directly unite with carbon and hydrogen to form carbonic acid and water, but as a part of the combination into which it has entered participates in a succession of changes of degradation presumably taking place and resulting in the formation of carbonic acid and water as main final products. The carbonic acid formed requires to be carried away and it is chiefly by the agency of the carbonate of soda in the blood that this is effected. Brought into contact with carbonic acid the carbonate of soda becomes converted into bicarbonate. The bicarbonate thus formed is conveyed by the blood to the lungs where it yields up its intake of carbonic acid to the air and returns to the state of carbonate which starts again on another round of work. Thus it is seen that the carbonated alkali of the blood performs in relation to carbonic acid a transport service similar to that which hæmoglobin performs in relation to oxygen. A limited amount of carbonic acid is also transported in simple solution. In the cold-blooded animal, where, on account of lower vital activity, the production of carbonic acid takes place on a much smaller scale, this mode of transit may suffice to accomplish what is wanted, as is evidenced by the continuance of life in a frog for a considerable number of hours when a saline solution has been substituted for its blood. In the warm-blooded animal, however, the production of carbonic acid is such that the capacity of transport by simple solution sinks to insignificance looked at in relation to the total quantity required to be conveyed, and the further provision supplied by the carbonated alkali is indispensable. Hence the effect of the loss of alkalinity of the blood is to deprive it of its power of carrying away the carbonic acid formed in the tissues. If the carbonic acid, the production of which is an essential phenomenon of vital activity, cannot be carried away it must obviously accumulate in the tissues and the only result that can be conceived sooner or later to follow is arrest of vital action. Choked with the product of their activity the tissues must yield to its toxic influence. Viewed in this way death intelligibly becomes a necessary consequence of the loss of the alkalinity of the blood. With the advance of the acidosis a period will be reached when, under the reasoning adopted, a fatal termination must ensue.

The characteristic breathing in diabetic coma testifies to the defect existing in connexion with the function of gaseous exchange. To the condition the term "air-hunger" has been applied and it certainly looks as if efforts were being made to rectify a deficiency of air in the system. The inspirations are deep and prolonged and although more air than can be obtained seems to be wanted there is nothing to reveal any obstacle to the entry of air into the chest. It is in the tissues that the respiratory want supplies the stimulus that regulates the mechanism of respiration. The lungs serve for the exchange of gases between the blood and the air, whilst the blood serves for the transport between the tissues and the lungs of the gases to be exchanged. For efficient tissue respiration these portions of the respiratory mechanism must be in a fit state for performing their work. Anything which interferes with the proper passage of oxygen to, or of carbonic acid from, the tissues will derange the chemistry of tissue life. If oxygen fails to reach the tissues in sufficient quantity or carbonic acid adequately to be carried away the result in each case is that the chemical operations of life are checked and functional power diminishes till a state of coma ending in death is produced. In acidosis the fault lies with the defect in the carrying power of the blood for carbonic acid by the loss of its alkalinity. As a consequence the tissues become poisoned by the carbonic acid that fails to be carried away. A corresponding defect in the carrying power of the blood for oxygen is occasioned by carbonic oxide. This gas, reaching the corpuscles, combines so tenaciously with their hæmoglobin as to prevent the subsequent ingress of oxygen. The tissues are in this way prevented from obtaining their supply of oxygen just as they are prevented from getting rid of their carbonic acid under the existence of acidosis. A parallelism, it is thus seen, in relation to defective transport action exists in the two cases.

The outcome of what has preceded is that the retention of carbonic acid in the tissues is the cause of diabetic coma with its associated "air-hunger" character of breathing. The phenomena observed agree with the effects of carbonic acid poisoning occasioned in other ways. The acids in the blood which writers upon the subject of acidosis speak of as producing, through their alteration of the constitution of the blood, the toxic results stand in the position of the precursory and not the immediate factor. In the condition produced by privation of oxygen there is, as might be expected, a similar train of phenomena. There is this distinguishing feature, however, that while convulsions occur in connexion with the coma of oxygen deprivation they are absent in carbonic acid poisoning.[8]

I previously said that there were two views bearing on the pathogeny of diabetic coma to which attention would be given. The view that remains to be considered is that of Sternberg,[9] which refers the coma to the toxic action of an assumed antecedent of oxybutyric acid—viz., amidobutyric acid. Proceeding upon the presumption that diabetic coma is due to a toxic agent in the blood and assuming that oxybutyric acid is derived from the disintegration of proteid he thought that an amido compound of it would be a likely precursor. This led him to experiment upon the effects of the series of amidobutyric acids upon the system, and in doing so he found that the β-amido acid acted toxically and produced symptoms resembling those of diabetic coma. There is first, he says, an excitement stage and next the comatose stage with deep and slow breathing. Grube[10] has repeated his experiments and obtained corroborative results. I notice that Sternberg speaks of the heart being strong and slow in action, but rapidity of action is one of the associations of diabetic coma. According to his suggestion the amidobutyric acid is a transitory step in the degradation of proteid towards acetone, and by delay of transition a toxic result may occur. Its presence in the body is only hypothetical, but with reference to this it is said that it passes with too much rapidity into the lower forms of the series for it to be recognisable.

On account of its seeming feasibility this amidobutyric acid theory has met with widespread favourable consideration. Forcible objection, however, has recently been raised to it. Magnus-Levy[11] gives an illustration showing that on the presumption of amidobutyric acid constituting a precursor of oxybutyric acid the quantity of the latter eliminated much exceeded what was compatible with the nitrogen elimination that occurred. The trend of opinion also at the present day from the recent evidence that has come into our possession is to the conclusion that oxybutyric acid is not actually derived from proteid, and if this is the case there is no ground for assuming that the production of an amido compound enters into the series of changes occurring. There is likewise against the amidobutyric acid theory the

[8] Since this section was written I have met with remarks by Bunge ("Physiological Chemistry," translated by Starling, 1902) which coincide with the view that has been submitted. Without entering into any particulars he simply says that acids reaching the blood deprive it of its carrying power for carbonic acid, which thence accumulates in the tissues and by its toxicity is the source of the coma of diabetes.

[9] Zeitschrift für klinische Medicin, 1899, Band xxxviii., p. 65.

[10] Archiv für experimentelle Pathologie und Pharmakologie, 1900, Band xliv., p. 349.

[11] Ibid., 1901, Band xlv., p. 389.

collateral consideration that with the occurrence of carbonic acid poisoning as a necessary sequence of acidosis nothing more is wanted. When acidosis is looked at simply as acidosis exerting a toxic influence on the tissues it is permissible for some other condition to claim an equal pretension to consideration, but looked at, as has herein been done, from the point of view of interfering with the performance of a necessary physiological operation, anything further becomes unneedful.

(To be continued.)

THE TREATMENT OF INTRA-PERITONEAL ABSCESS OF THE APPENDIX.

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IN the accompanying small series of consecutive cases of abscess of the appendix it will be noticed that in every case except the last the abscess was intra-peritoneal—by which is meant that the abscess which is formed in connexion with the appendix, although shut off by surrounding adherent coils of intestine, was in no way adherent to the parietes or only so slightly as to form no protection. In every case, therefore, the general peritoneal cavity had to be opened before the abscess could be dealt with.

The following are details which were performed in each case. A comparatively small incision is made through the skin down to the rectus sheath, which is divided. The length of the initial incision depends mainly upon the thickness of the abdominal parietes. The rectus muscle being pulled inwards, the posterior part of its sheath is opened and the peritoneum is incised and held apart by forceps. If now the finger is introduced and a search more or less roughly carried out for whatever may be found the consequences will be disastrous: the abscess cavity will almost inevitably be opened and the contained pus escape into the general peritoneal cavity. Great care is necessary to avoid this catastrophe, as *in the young*, even after many days, the adhesions are of the frailest character, and unless the intestines are manipulated with gentle hands these adhesions give way and expose the general peritoneal cavity to the infection of the escaping pus. To avoid this, when the peritoneum has been incised a blunt hook with a large curve is used to pull up the parietes on the left side of the incision. The general peritoneal cavity is shut off all round by introducing pieces of Gamgee tissue about from one and a half inches to two inches wide above, internally, and below, thus forming a crescent around the affected area. Now the abscess may be looked for by gently separating the adhesions in the neighbourhood of the appendix. This must be done *quite* gently, otherwise the pus, which is always under a certain amount of tension, may escape too rapidly to be controlled. If this does occur, as it sometimes will in spite of all proper care, the patient should be immediately tilted over to the right side and the pus directed to a small bowl held underneath. When the pus escapes gently it can be sponged up as it wells out of the cavity until the tension has ceased, when the opening is separated more widely and the cavity is thoroughly cleansed by sponging with Gamgee tissue (marine sponges should not be used). If there is any appendix to be removed this should be done now; the cavity is then dusted with iodoform and filled with iodoform gauze. In one or two cases the cavity was swabbed out with pure carbolic acid, but the subsequent oozing was so excessive that I gave it up. It is important, especially for the first 24 hours, to keep the surroundings as dry as possible and iodoform powder with moderately light packing of the gauze answers well. This packing is removed on the fourth day—i.e., after the bowels have acted—as a rule. In some of the cases peroxide of hydrogen was used to clean up the abscess cavity. I have used it now for some years and can recommend it. The abdominal incision is closed by one set of interrupted fishing-gut sutures, care being taken that each layer of the parietes is picked up by the needle—a large curved Hagedorn—as each suture is passed.

It will be noticed that seven out of the eight patients were young—a matter, I believe, of some considerable clinical importance. It is not intended in this paper, which is only a record of one's clinical experience, to deal with the vast amount of literature on the subject; but from what I have read and from what I have gathered from the clinical experience of others—and it certainly is my own—suppurative appendicitis is much more common in young people than the recurrent form, and hitherto sufficient importance has not been attached to this fact. In all these cases the attack which ended in suppuration was the primary one. The onset in each case was a sharp, definite attack of abdominal pain, and in most cases this—perhaps naturally enough—had been looked upon as an ordinary stomach-ache by the patient or relatives and the sufferer had continued to go about for several days before applying for medical relief. Herein lies the danger. If by chance adhesions form—and fortunately this is the rule—before the pus escapes from the appendix a bulwark of safety has been made which is of great value. But many of us have had personal experience of those cases when a young life is lost in two or three days by a suppurating appendix bursting before any sufficient adhesions were formed.

Another point which I have already mentioned is the *frail* character of the surrounding adhesions in the young even after many days. Case 1 was operated on 10 days, and Case 4 four days, after the original attack, yet in each case, as in all the others save one, quite delicate manipulation was necessary to avoid bursting the adhesions before the necessary guards had been placed around the affected area. The importance of recognising this clinical fact is evident. The one exception to this was Case 7. The age of the patient in this case was 48 years and here the adhesions were firm and strong, forming a good protection. In my experience this also is the rule in patients about this age. These facts emphasise the necessity of operating quite early after the primary attack of appendicitis in young children. In all these cases a thorough view of the abscess cavity was obtained and whenever any appendix or portion of it remained this was removed at the time. When the pus tracked up behind the colon a posterior incision was made, from which the wound drained, and the anterior incision was closed.

The sequel of commencing intestinal obstruction which occurred in Case 5 shows the advisability of removing any omentum which may, owing to its inflammatory condition, be capable of contracting adhesions with neighbouring coils of intestine. A certain amount was removed in this case, but, as the sequel shows, not enough. The rapid convalescence which ensued in all these cases was, I believe, due in great measure to the thorough cleansing of the abscess cavity at the operation and to the removal of whatever was left of the appendix.

With regard to the somewhat vexed question as to whether the appendix should or should not be removed at the time when the abscess is opened I do not think that any hard and fast rule can be made. In four of my cases the appendix was seen when the abscess cavity was exposed and was comparatively easily removed. But any systematic search when the appendix was not apparent was not made, and I do not think that it would be good surgery to make one, as very serious harm might be done by opening up the peritoneal cavity, and recurrences after an abscess has formed when the appendix has not been removed are rare.

The treatment of the last case on the list is one which I have adopted lately when pus or puriform fluid was found in the general peritoneal cavity, but at the time there was no general peritonitis. My reason for such treatment is my great and growing respect for the wonderful protective and recuperative power of the peritoneum when not irritated by chemical solutions and rough manipulation, which in these cases do nothing but harm.

CASE 1.—The patient, aged 15 years, was admitted into Charing Cross Hospital on July 6th, 1900. Operation was performed on the 13th and the patient was discharged on August 12th. There was pain in the abdomen on July 3rd, when castor-oil was given, and sickness on the 4th and 5th. The temperature varied from 101° F. at night to 98·6° in the morning. The patient was transferred to the surgical side on the 13th, when, as stated above, the operation was performed. The abdomen was somewhat distended. There was slight respiratory movement and the abdomen was markedly tender, especially over the right iliac region, where the skin was slightly œdematous, and a distinct fulness could be made out. At the operation the skin was incised for two inches over McBurney's point, the rectus sheath was opened, and the muscle was pulled

inwards. When the peritoneum was opened thickened œdematous omentum presented itself and the incision was enlarged one and a half inches. In the mid-line was a mass of omentum, underneath which was a gangrenous appendix and a small quantity of very offensive pus. The appendix was removed, the abscess cavity was swabbed out, and a portion of thickened omentum was cut away. The cavity was dusted with iodoform powder and was packed with iodoform gauze, and the greater part of the incision was brought together with silkworm-gut sutures. The iodoform gauze was removed three days after operation and a small piece was reinserted into the cavity for drainage purposes. The cavity filled rapidly and the patient was discharged on August 12th. The patient was again operated upon on Jan. 25th, 1901, for small ventral hernia.

CASE 2.—The patient, a girl, aged 13 years, was admitted into the Metropolitan Hospital on Oct. 11th, 1900. Operation was performed on the 16th and she was discharged on Nov. 13th. The patient had been taken suddenly with abdominal pain on Oct. 2nd. She kept about until the 7th when she went to bed and diarrhœa commenced. She was admitted into the hospital as suffering from enteric fever. When she was seen after admission a definite swelling in the right iliac fossa was discovered and appendicitis was diagnosed. At the operation an abscess was found situated between the adherent small intestines and cæcum. This was treated in the manner described above. An uninterrupted recovery followed. Peroxide of hydrogen was used as a lotion.

CASE 3.—The patient, a girl, aged 15 years, was admitted into Sutton Cottage Hospital on Sept. 4th, 1900. Operation was performed on the 9th and the patient was discharged on Oct. 9th. She had been taken ill with abdominal pains and vomiting on Sept. 2nd; the pain and resistance were most marked in the right iliac fossa. When she was seen on the 9th there was a well-marked swelling in the right iliac fossa, the temperature being 103·2° F., but the patient was lying on the affected side reading a book. At the operation an abscess was found containing nearly one ounce of characteristic pus. This was treated on the same lines as the others. The patient made an uninterrupted recovery.

CASE 4.—The patient, a youth, aged 17 years, was admitted into the Metropolitan Hospital on Feb. 6th, 1900. Operation was performed on the 23rd and the patient was discharged on April 3rd. He had been seized with acute pain in the lower abdomen during the night of Jan. 30th and this was followed by vomiting. The pain and daily vomiting continued until his admission into the hospital, when an indefinite swelling was found in the right iliac fossa extending as far as the middle line. This swelling was dull on percussion. At the operation the omentum, which presented through the wound, was found adherent to the anterior abdominal wound and also to a loop of small intestine; this loop was adherent to the lower part of the cæcum. Between these coils was a small abscess and the remains of the appendix. These were removed and the cavity was packed with gauze. The patient made a good recovery, but the sinus was longer than usual in filling up. Peroxide of oxygen was used as a lotion.

CASE 5.—The patient, a youth, aged 17 years, was admitted into Charing Cross Hospital on Oct. 26th, 1900. An operation was performed on the 26th and he was discharged on Jan. 9th, 1901. The previous history of this patient was not clearly made out, but on admission he was quite ill and had obvious signs of suppurating appendicitis. At the operation the omentum, the small intestines, and the cæcum were all matted together, and on separating these a considerable abscess cavity was exposed filled with foul pus. In the cavity was the gangrenous appendix; this was removed and the cavity was swabbed out and packed with iodoform gauze. A portion of the sodden and thickened omentum was removed. The patient did very well until the third week, when he had symptoms of intestinal obstruction, necessitating a laparotomy, which was performed in the mid-line, when two coils of intestine were found adherent to the great omentum. These were separated and the patient made a good recovery.

CASE 6.—The patient, a girl, aged 11 years, was admitted into the Metropolitan Hospital on July 1st, 1901. Operation was performed on the 2nd and she was discharged on August 4th. She had first complained of pain in the right iliac fossa on June 25th, which gradually became worse until the 29th. There had been no sickness. The bowels had been opened twice a day. On the day of her admission into the hospital she had lamb and mint-sauce twice. At this time her temperature was 103° F. and her pulse was 132. The abdomen had a distinct fulness and sense of resistance in the right iliac and lumbar regions, where manipulation caused pain. On opening the abdomen the colon presented itself. This was pulled towards the middle line and an abscess cavity situated externally to the colon was found, which held two ounces of foul pus. The cavity extended up towards the liver and was lined with a thick white membrane. A posterior incision for better drainage was made in the loin and the abscess cavity was treated in the same way as the other cases. Recovery was uninterrupted.

CASE 7.—The patient, a female, aged 48 years, was admitted into the Metropolitan Hospital on July 3rd, 1900. Operation was performed on the 4th and the patient was discharged on August 14th. She had suffered from sudden severe pain in the lower abdomen on June 25th which settled in the right side; there was no sickness, but rather violent retching. The abdomen moved freely on respiration and on palpation a large mass could be felt in the right iliac and lumbar regions which extended upwards to the lower surface of the liver. The abdomen was opened by an incision four and a half inches in length. When the transversalis muscle was reached it was found to be much infiltrated and thickened. On opening the abscess cavity firm adhesions formed definite and safe boundaries (the only case of this series where this was so). The abscess cavity was treated in the usual manner. Recovery was uninterrupted.

CASE 8.—The patient, a young man, aged 20 years, was admitted into the Metropolitan Hospital on Nov. 5th, 1901. Operation was performed on the same day and the patient was discharged on Jan. 4th, 1902. He had suffered from a sudden attack of pain with shivering and nausea on Nov. 3rd, 1901, since when the bowels had not acted and no flatus had been passed. Vomiting commenced on the 5th. On admission the patient looked very ill. The temperature was 97·5° F. and the pulse was 120. The abdomen was distended and rigid; it did not move with respiration and was very tender all over the right iliac fossa. The feet and hands were found to be peeling in a manner suggestive of scarlet fever. When the patient was sent into the hospital the case was notified as one of typhoid fever. On the abdomen being opened the intestines in the right iliac fossa were found to be covered with a thin puriform fluid. There were no signs of adhesion or appearance of localisation of peritonitis. A long, swollen appendix was found lying on the outer side of the cæcum, between it and the parietal peritoneum. This was removed and a quantity of sero-purulent fluid was withdrawn by a syringe from the right side of the pelvis. The wound was treated as in the other cases, with the addition that a large drainage-tube was passed down into the recto-vesical pouch. The patient was constantly sick until Nov. 8th when, after repeated treatment, the bowels acted well. Recovery after this was uninterrupted. When on the 15th the stitches were removed it was found that no union had taken place, the whole wound gaping and exposing the intestines. No ill effects followed this unusual *contretemps*.

Harley-street, W.

INTUSSUSCEPTION OF A DIVERTICULUM WITH SECONDARY ILEO-COLIC INTUSSUSCEPTION.

BY FRED. T. TRAVERS, B.S. LOND., F.R.C.S. EDIN.,
SURGEON TO THE WEST KENT GENERAL HOSPITAL, MAIDSTONE.

ON April 3rd I was asked to see a boy, 10 years of age, who was suffering from sickness and abdominal pain. He had been quite well until the previous day, when he sat down with the rest of the family to breakfast. Suddenly, before taking any food, he complained of abdominal pain and vomited. The vomiting had continued at frequent intervals up to the time of my seeing him, that is, at 6.30 P.M. next day. There had been a good action of the bowels on the 1st and no recent constipation or diarrhœa; neither flatus, mucus, nor blood had been passed since this action. The child was lying with his legs drawn up, his face was flushed, and his tongue was dry and brown. The pulse-rate was 116 and the temperature was 98° F. He complained of

pain in the right side of the abdomen. On examination the abdomen was seen to be flat, with the exception of a slight but distinct prominence on the right side. In the area thus defined a tumour could be felt, about two inches in length by an inch in width, lying with its long axis at right angles to the middle third of a line from the umbilicus to the right anterior superior spine of the ilium. It was firm and tender and dull to percussion. Nothing else abnormal could be felt though the abdominal wall was quite yielding. A rectal examination gave no information. There had been only slight tenesmus, but an attempt to defecate just before I saw him had caused much pain and had increased the vomiting. The sudden onset of the illness and the symptoms of obstruction, with the condition of the patient, strongly pointed to an intussusception. The early and persistent vomiting and the position of the tumour suggested the ileum as the part affected. I therefore directed his friends to take him at once to the West Kent Hospital at Maidstone, his father being a labourer with a large family. At 9 P.M. I saw him in the hospital. The swelling in his abdomen previously noticed had entirely disappeared but now a somewhat indefinite mass could be felt in the position of the ascending colon. His pulse-rate was 132 and he had been again very sick. Operation was decided upon and at 9.30 P.M. I opened the abdomen by an oblique incision two and half inches in length parallel to the fibres of the external oblique muscle and one and a half inches from the

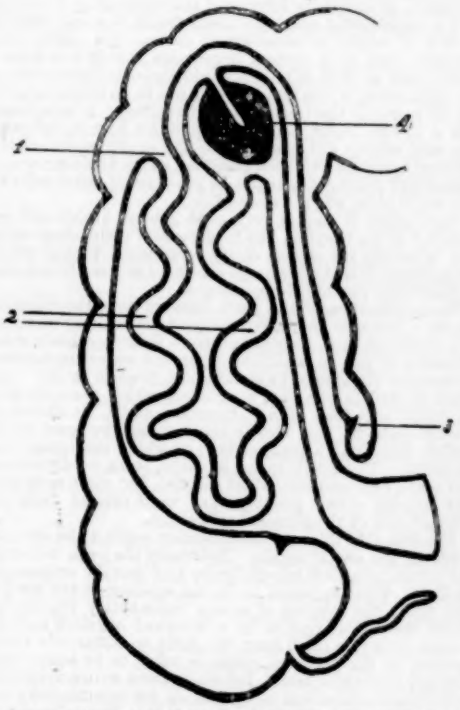

Diagram illustrating intussusception due to an inverted diverticulum. 1, True apex of the intussusception. 2, Ileum, 14 inches, in tightly-packed coils. 3, Position of the ileo-cæcal valve. 4, Inverted diverticulum, showing œdematous thickening of the walls.

iliac spine. The external oblique was split and the deeper layers were drawn aside and slightly notched. On opening the peritoneum the cæcum presented; it was quite flaccid and empty. This and the long vermiform appendix were rapidly examined. The ascending colon was then felt and was found to contain a doughy mass extending for three and a half inches and with a hard lump of the size of a filbert at its apex. The ileum was hooked up with the finger and was found to be intussuscepted into the colon. By gently pressing down the mass in the colon the ileo-cæcal valve was first everted from its position three-quarters of an inch from the base of the tumour. The ileum appeared to go directly to the harder portion mentioned and by carefully pushing this down and drawing out the ileum some three inches of gut and then this mass were reduced. The passage of this portion through the ileo-cæcal valve was effected by pushing it through from the distal side and was the only part which gave any trouble. As soon as it was free a number of small coils of bowel easily followed which had been packed in closely and which came out much as string comes from the inside of a ball. Finally, the returning layer formed by the last three inches of the ileum was reduced. This portion of bowel showed signs of having been greatly distended and the peritoneum was sutured in two places where there were lacerations. The adjoining part of the ileum, 14 inches in length, was on reduction much compressed and anæmic but in a very few minutes it resumed a normal appearance. Above this, 18 inches from the valve, was the swollen part. On examining this it was found that a pouch or diverticulum was here intussuscepted, or rather inverted into the bowel, forming a polypoid mass which almost completely obstructed the lumen of the gut. This was partially replaced but owing to the swelling of its coats could not be entirely reduced, its apex still remaining tucked in though it no longer projected within the bowel. The diverticulum, about three-quarters of an inch in length and nearly of the size of the little finger, sprang from the gut opposite to its mesenteric attachment. A point, however, which drew my attention was the presence of a fold nearly half an inch wide running from the mesentery around the lower surface of the bowel to the little diverticulum, the edge of the fold being free and forming a little recess above and below in the angles between the ileum and the pouch. The bowel was replaced and the wound was closed, buried sutures uniting the cut muscular walls. The operation lasted just half an hour, the patient rallied well from the ordeal, and the sickness ceased entirely. The bowels acted on the 5th after a small enema. The tongue, though moist, continued to exhibit a thick fur until after the administration of several 10-grain doses of sulphate of magnesia on the 6th. The stitches were removed on the 13th and the boy was sitting up in bed on the 18th and he returned to his home on May 2nd.

The condition here appears to have been primarily due to inversion of the diverticulum which then formed a polypoid mass and induced irregular peristalsis and secondary intussusception. The œdematous state of this pouch and the bowel wall immediately adjoining it showed that it had been affected longest; indeed, at this point alone was there any œdema present. The secondary intussusception was, I think, when first seen still of the simple enteric form and the tumour then felt was altogether on the proximal side of the ileo-cæcal valve. The change of position and shaking consequent on the removal of the patient produced the condition found at the operation, the enteric intussusception having become ileo-cæcal. The difference in the conditions of the abdomen at 6.30 P.M. and at 9 P.M. was very striking. The stretched appearance of the returning layer of the ileum and the injury to its peritoneal coat can readily be accounted for—although from the absence of œdema or circulatory disturbance the part cannot have been long involved—by the fact that into between three or three and a half inches of inverted ileum some 18 inches of the adjoining bowel and the mass formed by the inverted diverticulum had been tightly packed. The coils of bowel were wedged in by the latter which had been carried right up to the apex of the tumour.

The total absence of the classical symptom of the passage of blood and mucus is noteworthy, and the almost complete freedom from tenesmus exemplifies well how dependent this is on the implication of the large bowel in the affection, which here apparently occurred quite late.

The diagram gives almost exactly the arrangement of the bowel in the tumour, the tightly-packed coils of bowel being partly omitted for the sake of clearness.

Maidstone.

THE WATER-SUPPLY OF NEWPORT (MON.).—At the monthly meeting of the Newport corporation held on July 8th it was reported that the supply of water in the reservoir was less by 14,000,000 gallons than for the corresponding period of last year. The service has been suspended during several hours each night for over 12 months and the shrinkage now going on foreshadows a very severe situation at the end of the summer.

A CASE OF VERTICAL OR COMPLEX HERMAPHRODITISM WITH PYOMETRA AND PYOSALPINX; REMOVAL OF THE PYOSALPINX.

BY E. PERCY PATON, M.S. LOND., F.R.C.S. ENG.,
ASSISTANT SURGEON TO WESTMINSTER HOSPITAL, ETC.

THE case of which the notes are given below is, I think, of sufficient general interest to be put on record.

A patient, aged 20 years, came under my care at the Mildmay Mission Hospital, Bethnal Green, on March 17th, 1902. He was complaining of very frequent and painful micturition and thickness of the urine and some tenderness over the bladder. On examination he was found to be a double cryptorchid and to be hypospadiac, the hypospadias being of the perineal variety; the penis was very poorly developed and only between two and three inches long, there was a depression in the glans at the normal seat of the meatus, but this opening was blind, and the whole of the floor of the penile urethra was wanting, the urine being discharged by an opening in the perineum which admitted a No. 10 catheter with ease. On either side of this opening were two folds of skin representing the split scrotum, but the folds were empty, there being no signs of testes to be found here or in either inguinal region. Extensive scarring was to be seen on the right side of the hypogastric region which the patient said was due to an abscess which had been opened about a year before and which had now been closed for about six months. Beneath this scar there was to be felt an ill-defined fulness the nature of which could not be clearly made out, partly on account of its tenderness and partly because of the scarring. The condition of the urine varied a good deal at different times; sometimes there was a very considerable amount of pus present; at others he would pass a very fair quantity which was almost clear—occasionally, but only on one or two occasions, and not at any regular intervals, there was a little blood present. On passing a catheter it was never possible to obtain more than a small quantity of urine at one time and this was always thick with pus, though he could often pass six or eight ounces at once himself when the quantity of pus was usually much less. In general appearance the patient was very small and puny for his age. He had no hair on his face and the pubic hair was scanty; his face had rather a feminine aspect, his voice was also high-pitched. The breasts were more developed than is usual in a male, the development being similar to that usually seen in a girl about 15 years of age.

An investigation of his history showed that he had always been a rather feeble person and that he had been for the most part of his life at an orphan school owing to the early death of his father, but the authorities there had not noticed anything peculiar about him except his physical deformity and general want of development. There was no evidence to be obtained of menstruation. His mother also said that his brother and sister, who had emigrated to Canada, were both well developed. He had been earning his living as a tie-maker for the last three years except when he had been laid up with the abscess mentioned above and with an attack of bronchitis. He did not appear to show any special sexual feeling, but had been always considered a male.

He was at first treated by having the cavity into which the catheter passed, and which was thought to be the bladder, washed out daily and this diminished the hypogastric tenderness and the amount of pus in the urine. But as a thorough examination could not be made he was given an anæsthetic on April 7th, a large fluctuating tumour was then found in the hypogastrium which appeared to be the bladder but the catheter failed to draw off more than a small quantity of urine and left the swelling as it was. Rectal examination enabled one to feel this swelling bimanually and also to feel a mass which felt like an elongated prostate on its posterior surface but this extended above the reach of the finger and its connexions could not be clearly made out. Under the scar there was also to be felt a much smaller mass, but this could not be properly defined as it was masked by the larger swelling.

Three days later the patient was again anæsthetised with a view to opening his abdomen. It was then found that the state of parts was quite altered as the large fluctuating swelling was absent and only the smaller one to the left of it could be felt. An incision was made in the middle line and the abdomen was opened below the umbilicus. On separating a good many adhesions there was found a tube-like structure, running up from the pelvis to be adherent to the old scar and also to a coil of gut, and on more clearly defining this it appeared to be a Fallopian tube full of fluid and of about the size of the middle finger attached along the upper border of a very rudimentary broad ligament and leading at its inner end to what appeared to be a uterus which, though not fully developed, was of considerable size and to which was attached on the other side another Fallopian tube which seemed to be normal. To the posterior aspect of the left broad ligament there was found attached a gland which was of the size and appearance of a normal ovary. The large cystic swelling which had previously been felt was found to be the bladder considerably dilated but now empty. The left tube and the gland were now removed; no similar gland was found on the right side, but no very careful examination could be made as the operation had lasted for some time and it was thought well to close the abdomen. The recovery from the operation was uninterrupted but pus continued to be passed in the urine although the general condition was much improved. On May 8th, as the discharge of pus still continued, a further careful examination was made, the intention being, if thought advisable, to scrape the interior of the uterus after dilatation of the hypospadiac opening; it was found, however, that to do this it would be necessary to slit up the orifice considerably, and as it seemed improbable that it would heal kindly, and as if it did not it would seriously inconvenience his micturition, it was thought well not to do this at present but to continue the treatment by irrigation. It was found that a uterine probe could be passed for four inches with ease and clearly did not go into the cavity which at the previous operation had been identified as the bladder; a very careful and prolonged attempt to get a small metal catheter into the bladder was not successful.

The patient is now in very good general health and has gone out of the hospital, but is being kept under observation and is having the uterine cavity occasionally washed out, it being intended if the discharge continues at some future date to remove the rest of the appendages.

The examination of the parts removed gave the following results. The tube had in every respect the ordinary structure of a Fallopian tube, somewhat dilated so as to contain about a drachm of pus, in which no organisms were demonstrated by ordinary staining or by staining for tubercle bacilli. The gland showed in one part a structure which there could be no doubt was that of a rudimentary testis, as ill-formed tubules could be very clearly seen; in another part of the section there was a mass of cells of which the nature was uncertain. These cells varied in shape, being mostly cubical and round cells and some short spindles, but there were none like ovarian cells; possibly they were derived from the original cells of the germinal epithelium.

Remarks.—In this case the following seems to be the condition of the sexual organs. Externally the penis was small but otherwise normal except for the fact that the urethra had no floor. What appeared to be the opening of the urethra was really the opening of a very rudimentary vagina into which the uterus opened by a fair-sized aperture and the urethra by a very small one; the folds on either side of the opening in the perineum might be taken to be either rudimentary scrotum or labia. Internally there were a very fairly well-formed uterus and tubes, and on the left side the gland which was removed was clearly a testis; it was uncertain if there was a similar gland on the right side. There was no evidence of the existence of epididymis, vas deferens, or prostate, but it was quite possible that these might be present in a rudimentary form as no examination to settle this point could of course be made. The bladder was normal save for considerable increase in size. The general build of the individual was rather of the female than of the male type. The above-mentioned points would lead one to classify the case according to Simpson's classification[1] as one of true double, vertical, or complex hermaphroditism, in which part of the internal organs are of the male and part of the female type, though some deny

[1] Sir J. Y. Simpson's Works, vol. ii., p. 407.

the term "true hermaphrodite" to any case in which both an ovary and a testis are not present.

Park-street, Grosvenor-square, W.

SIX CASES OF MENINGITIS IN ONE HOUSE, WITH TWO DEATHS.

BY EDWARD H. SWEET, B.A. OXON., M.R.C.S. ENG., L.R.C.P. LOND.

THE following cases, all of which occurred within a period of two months, present many points of difference from the text-book descriptions of either cerebro-spinal or posterior basic meningitis.

At the beginning of this year the occupants of the house wherein the cases occurred consisted of the father, the mother, the mother's sister, and nine children (eight boys and one girl) varying in age from 11 years to twins born in December last. One of the twins died in January last from broncho-pneumonia. As regards the family history of this household, the father had tuberculous disease of one lung, the mother was not strong but had no disease, her sister was a strong and healthy woman, and another sister had died some years ago from consumption. The parents of both the father and the mother were alive and in good health and the family history was otherwise a very good one. In February of this year the whole family suffered from influenza, followed by troublesome coughs.

CASE 1.—Early in April last the girl, aged six years, complained of a stiff neck and constant headache. She was occasionally sick and quite lost her appetite. I saw her first on April 28th and found her very much thinner than when I had attended her two months previously for influenza. She was drowsy, sick after every meal, and complained of a dull pain all over her head. Constipation was very troublesome but the tongue was not at all coated. The pulse was soft and irregular and the temperature was 99·2° F. Knowing the father's condition I feared tuberculous meningitis. The sickness easily yielded to careful feeding and ordinary stomachics but the constipation continued to be troublesome all through her illness in spite of two-grain doses of calomel twice a day. As soon as the sickness stopped I administered three grains of iodide of potassium with five grains of bromide of potassium every four hours in addition to the calomel. The stiffness of the neck had decreased and was not much complained of at this time. At no time was there any retraction of the head, irritability, or photophobia. As a rule the patient lay curled up in bed with the eyes half closed and had no objection to being moved. Emaciation progressed rather rapidly though liquid food was well taken and retained, and the abdomen became much retracted. Tache cérébrale was well marked. On May 1st I examined the eyes. The pupils were slightly dilated and they reacted sluggishly to light. The discs were swollen and retinal hæmorrhages were present in both eyes. There was never any screaming, convulsions were absent, and there was no squint. The patient gradually sank into insensibility, and on May 12th she died. During the last three days the temperature rose to, and remained at, 101°. The pulse continued to be irregular and was generally about 100.

CASE 2.—Before I saw the child in Case 1 the eldest boy, aged 11 years, had been brought to me with a history of constant headache, occasional vomiting, loss of appetite restlessness, and grinding of the teeth at night. The bowels were very constipated but the tongue was fairly clean. The sickness appeared to be quite independent of food and it came on quite suddenly. I suspected worms and treated him for them without any result. He remained under treatment for six weeks and is now quite well.

CASE 3.—On May 26th I was asked to see the mother and I found her suffering from constant sickness and severe headache—chiefly occipital. The bowels were very constipated, the pulse was irregular and weak, and the temperature was 98° F. I prescribed three grains of calomel and a mixture containing six grains of iodide of potassium, 10 grains of bromide of potassium, and five grains of antipyrin every four hours and milk-and-soda and brandy every hour. Next morning the sickness and headache had abated and the bowels acted after an injection. The patient now complained of great stiffness and soreness in the muscles of the neck and the head was held stiffly but there was no retraction. There was also pain in the back but no hyperæsthesia or anæsthesia of the trunk or the limbs. She steadily improved and on June 2nd I was able to send her away for a change.

CASE 4.—The same evening I was sent for to see the fifth child, a boy, aged two and a half years, who was said to be very sick and drowsy. His father's account was that he had seemed "out of sorts" for two or three days. The appetite had been bad and he had occasionally complained of headache. When I saw him he lay curled up in bed and rather resented being moved. The pupils were rather dilated and reacted sluggishly to light. There was no photophobia or head retraction. The pulse was 110 and irregular and the temperature was 99·2° F. The bowels had not acted for two days in spite of a dose of castor oil, but the tongue was not coated. They acted a little later after a glycerine injection. Next morning vomiting had ceased, but the patient was more drowsy; he was, however, conscious when aroused. I ordered an ice-bag to be applied to the head and prescribed the same drugs as had been prescribed for the patient in Case 1. In the evening Mr. A. H. Buck of Brighton kindly came over and saw the patient. He recommended a Scott's dressing to be applied to the shaved scalp and milk with a few drops of brandy to be taken every half-hour. Next day the pulse had improved but the cerebral symptoms progressed rapidly. Three days later the patient had convulsions affecting the right arm and leg and convergent squint and he died in the evening. Up to the last day he had taken food well and there had been very little wasting. The temperature after the first day had remained subnormal. There had been slight retraction of the head during the last two days but no opisthotonos. Tache cérébrale had been well marked. Mr. Buck examined the eyes with great difficulty owing to the restlessness of the child and thought that the discs were slightly swollen.

CASES 5 and 6.—On June 6th the aunt and on the 12th the father were attacked with symptoms similar to those of the mother—viz., violent headache, sickness, stiffness of the neck, and constipation. Each recovered in about four days.

The other children of the family remain well at present. On Mr. Buck's advice they were all sent away on the day following his visit and the family have now moved into another house. Neighbours naturally were anxious to know if the disease was infectious and it was with no confidence that I gave it as my opinion that it was not infectious from person to person but that the fault lay with the house or the soil.

I may add that the house stands on high ground, one mile from Crowborough, on the edge of an extensive common. The soil is a sandy loam. There are only two other houses within a quarter of a mile of it and these are about 50 yards apart. The house contains two sitting-rooms and three bedrooms of fair size. Part of the floor of one sitting-room was constantly damp until a drain was sunk along the outer wall about two months ago. The father told me that when sinking this drain he found that the soil had a very bad smell. The brick floors of the lower rooms are laid directly on the surface of the common, without any air course, and the soil is full of decaying vegetable matter. I regret that I was unable to obtain a post-mortem examination on either of the children.

Uckfield.

A CASE OF FRACTURE OF THE SPINE; LAMINECTOMY; RECOVERY.

BY R. T. BOWDEN, M.D. DURH.,

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ON June 3rd, 1901, I was called to see a man, aged 52 years, who had been knocked down by a runaway horse and water-cart. He was standing with his back to the cart and the shaft caught him in the lower dorsal spine and threw him forwards. When I saw him half an hour after the accident he was quite conscious and was complaining of severe pain in the dorsal spine. The power of movement in the lower extremities was limited to an almost imperceptible movement of each great toe. Sensation was unimpaired. The reflexes

were absent. It was stated that immediately after the accident he was able to move the legs fairly well. On examination a distinct irregularity could be made out in the spinous processes of the eighth, ninth, and tenth dorsal vertebræ, and on a later occasion, when making another examination, distinct crepitus was detected. In addition to this injury two fingers of the right hand were hopelessly crushed and there was a severe contusion of the right knee together with various other injuries of a slighter nature. The fingers were amputated at once and the patient was placed on a water-bed. A few hours after the accident there was extreme distension of the abdomen from inability to pass flatus per rectum. This caused great distress, but was relieved to some extent by passing a tube into the rectum and by giving large doses of castor-oil and turpentine enemata. There was complete retention of urine. The catheter was used regularly and a few hypodermic injections of morphia were given.

On June 8th the patient was seen by Mr. Watson Cheyne who performed laminectomy. The laminæ of the eighth, ninth, and tenth dorsal vertebræ were divided and the intervening bone was removed exposing some three inches of the spinal cord. The pieces of bone removed were fractured in various places and one fragment could be distinctly seen pressing on the cord. Several clots of blood were also removed. On introducing the handle of the scalpel by the side of the cord a fracture of the body of the ninth dorsal vertebra could be detected, the upper fragment being displaced slightly forwards. With a gouge the sharp edge of the lower fragments was smoothed down. The dura mater was not opened. The external wound was sutured and an abundant antiseptic dressing was applied.

The patient did not suffer in any way from the immediate effects of the operation, there was no rise of temperature, and no increased discomfort of any kind was felt. For 10 days the wound was left undisturbed and the patient was then turned gently on his side and the stitches were taken out. The whole wound appeared to have healed by first intention. During the next few weeks the scar was inspected from time to time and all appeared to be going well until July 15th, when there was a sudden rise of temperature with tenderness along the scar and a few days later a small abscess burst leaving a sinus which did not finally heal until three months later.

About three weeks after the laminectomy it was noticed that there was a slight increase in the power of movement in the lower extremities. But at this time and for many weeks afterwards the patient's general condition was unsatisfactory. He was wasting very much; there was no power of expulsion in the rectum which had to be emptied frequently by mechanical means; there was complete retention of urine and the water at times became ammoniacal and offensive. The most scrupulous care was exercised in the use of the catheter and for some months the bladder was washed out daily with boric solution. When the urine became offensive a little boric acid given internally appeared to do much good. Massage and electricity were employed regularly for many months.

It was not until some three months after the accident that any real improvement became manifest. The patient commenced then to put on flesh, the bowels began to act occasionally of their own accord, the urine became acid, but there was still complete retention. Increased power of movement was first noticed in the toes and feet and gradually it extended up the limbs. At the end of another three months he was able to stand and could take a few steps about the room with assistance; the bowels were acting much better though there was still complete retention of urine. From this time onward the progress was steady and continuous, but it was fully nine months after the accident before there was the slightest power to pass urine voluntarily.

The patient's condition at the present time (just a year after the accident) is as follows. He can walk a distance of two miles with hardly any fatigue and he is steadily gaining strength; he feels in perfect health, sleeps and eats well, and is fatter than he has been for years past; the bowels act naturally and he can pass urine fairly well but still finds it advisable to use the catheter once or twice daily. The reflexes are not well marked; a slight patellar reflex can be obtained. Throughout the whole illness the patient exhibited an extraordinary amount of pluck; during all his months of suffering he never lost heart; he said from the first that he intended to surprise his doctors, and he has done so.

Ramsgate.

A CASE OF

RHEUMATIC HYPERPYREXIA FOLLOWED BY SYMPTOMS RESEMBLING THOSE OF DISSEMINATED SCLEROSIS.

BY WILLIAM ALLEN, L.S.A.,

AND

JAMES W. RUSSELL, M.A., M.D. CANTAB., M.R.C.P. LOND.,

ASSISTANT PHYSICIAN TO THE BIRMINGHAM GENERAL HOSPITAL.

THIS case is of interest less from the extremely high level which the temperature reached than from the nervous lesions by which it was followed.

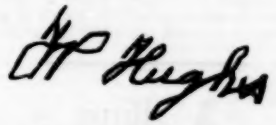
The patient was a man, aged 30 years, a butcher by occupation, with a good personal and family history. He was attacked with acute rheumatism on Nov. 14th, 1898. The attack ran a mild course and on the morning of Nov. 17th the temperature was normal and the patient's condition was in every way satisfactory. In the course of that day, in consequence of a fright due to the escape of a bull from his yard, he got out of bed and in the evening he was restless and inclined to wander. His temperature was found to be 107° F., but it was quickly reduced by the application of a cold pack. Next morning the temperature had again risen to 107° and though it was again reduced by the further application of cold packs it once more rose to 108°. Early in the afternoon the patient became violently delirious and the mercury reached the end of a thermometer the maximum register of which was 115°. It was certainly above this level. At about 3 P.M. the patient was seen by us together. He was then completely unconscious, the breathing was shallow and irregular, the face was cyanosed, and the whole appearance suggested the immediate approach of death. In a thermometer placed in the axilla, the maximum register of which was 110°, the mercury at once ran up to the extreme limit. The one favourable feature was the state of the pulse, which was hardly so bad as the general condition of the patient led us to expect, and we therefore decided to try once more the vigorous application of cold. As there was no bath in the house a quantity of ice was obtained and packed round the body and limbs and on the head, the chest, and the abdomen, and in the course of three-quarters of an hour the temperature slowly came down to 102°, at which point the ice was removed. The temperature subsequently dropped to 98°. During the reduction of the temperature several general convulsions had occurred, and by the end of the hour these were being repeated every few minutes. An hour later the temperature had risen to 99°, and the patient, though still not to be roused, was showing some signs of a return to consciousness. He moved restlessly in bed, made inarticulate sounds, and there was some resistance to passive movement. After this there was a slow return to consciousness, though the ordinary mental condition was not regained for several days. The temperature remained constantly and irregularly raised for the succeeding three weeks, but it only once reached 104°. There were no convulsions after the day of the hyperpyrexia.

On regaining consciousness it was found that the patient had, to a great extent, lost the power of articulate speech and it was with great difficulty that he could make himself understood. There was no aphasia of any description—the difficulty was one of articulation only. Further, when he became convalescent and the weakness left by the fever had somewhat abated it was found that there was quite unable to walk owing to a condition of extreme ataxia of the legs. This slowly improved until the following June, when he was sufficiently improved to be driven into Birmingham, and on June 23rd, 1899, he was for the second time seen by both of us in consultation. The nervous symptoms then only differed from those to be described below as constituting his permanent condition in the greater degree of ataxia of the lower extremities, and we shall here therefore only allude to this feature. The patient was unable to walk or stand without support. With help he walked with short steps, putting each foot forward with great care and much unevenness of movement. On standing with the feet together and the eyes shut there was complete loss of balance. The coördination of the upper extremities was similarly, though to a less extent, affected. The movements of the hands and fingers were unsteady and writing was almost impossible, the pen

spluttering and catching on the paper, and the attempt being given up finally in despair. A fuller report of the nervous symptoms is reserved for the account of the next joint examination, but it should be added that there was even then no evidence of any loss of muscular power, nor was there any recognisable rigidity.

On May 2nd, 1900, we again saw the patient together. His condition was as follows:—

Motor system.—He was now able to walk by himself and on the whole steadily, though every now and then there was a little loss of balance. He walked, however, with great care, putting one foot before the other slowly and deliberately, saying that he had to be careful lest he should fall. The feet were kept rather widely apart and turning was especially difficult. He was quite unable to walk along a line without support. Romberg's sign was but slightly marked but when lifting one foot on to a chair there was marked disorder of movement. The movements of the upper extremities were awkward and clumsy; for instance, in attempting to grasp the hand of one of us there was a good deal of coarse, uneven movement. When held out horizontally, with the arms close to the body, the hands were steady, except for slight wavering on the right side, but if the forefingers were pressed together with the arms well out from the body there was very marked rhythmical coarse tremor. There was much unsteadiness in placing the forefinger on the tip of the nose even with the eyes open and there was similar difficulty in bringing the tips of the forefingers together from a distance. The power of writing had considerably improved, though the attempt still caused a good deal of tremor which was only controlled by keeping the pen firmly pressed on the paper. The following is a specimen of the handwriting:—



There was no nystagmus and no tremor of the tongue. The motor power in both upper and lower extremities appeared to be intact, neither was there any paresis of the muscles of the face, the tongue, or the eye. There was perhaps a very slight tendency to rigidity of the legs at the beginning of passive movement, but if present it wore off at once and we were not convinced that it really existed. The bladder and rectum were, and had always been, perfectly under control.

Speech.—Speech was slow, monotonous, and markedly scanning; it would have passed as a most typical example of the scanning speech of disseminated sclerosis. The articulation was distinctly, though slightly, blurred.

Sensation.—Sensation was everywhere perfect both to touch and pain. The temperature sense was not tested.

Reflexes.—The plantar reflexes were sluggish and flexor in type. The knee-jerks were moderately increased. On testing for ankle clonus a few slight contractions were obtained on each side.

Muscles.—The muscles were well nourished and there was no trace of any wasting. The electrical reactions were, however, somewhat sluggish both to faradism and galvanism. Kathodal closing contraction was uniformly greater than was anodal closing contraction.

The optic discs were normal and there was no trophic disorder of any sort. General nutrition and health were excellent. The mental faculties were, we think, quite unimpaired, though the monotonous intonation and blurred articulation gave a false air of mental feebleness.

We have recently made a final examination—namely, on April 28th, 1902—but have practically nothing to add to the foregoing description. There has been perhaps some gain in control over the finer movements of the limbs, but the gait is still slow and careful. The patient is able to do the ordinary work of a butcher's shop and he told us with pride that he had once succeeded in killing a sheep. His handwriting is much as before, his speech retains the same typical scanning character, and in all other respects no change is to be detected.

We have searched the literature of hyperpyrexia in rheumatic fever and have only succeeded in finding the report of one similar case. It occurred at the Birmingham General Hospital and was published by Dr. Arthur Foxwell in THE LANCET.[1] In that case the highest point reached by the temperature was 111° F. and it remained raised for 10 days afterwards. The hyperpyrexia occurred on Sept. 28th, 1884, and on Oct. 9th it was noticed that there was difficulty in pronouncing consonants and that the intonation was nasal. On Oct. 20th rhythmical tremors were observed; the knee-jerks were exaggerated, more so on the left side; and there was right ankle-clonus with a very slight degree of the same condition on the left. Sensation was normal but the leg movements were very feeble and the electrical reactions were sluggish. On the 22nd the speech was perceptibly scanning and on the 25th the gait was ataxic and there was slight nystagmus. As in our case considerable improvement subsequently occurred in Dr. Foxwell's case, but when the patient was seen a year later there were still some disorder of speech, paresis of the limbs, and tremors, the left arm and right leg being most affected. Dr. Foxwell suggested a diffused inflammation occupying the substance of the medulla and lower half of the pons as a possible explanation of the condition. Some small scattered hæmorrhages would be an alternative solution and the occurrence of convulsions during the hyperpyrexia in our own case would seem to suggest some immediate lesion. We have seen one case of rheumatic hyperpyrexia recorded in which such a lesion was present post mortem but have been unable to find the reference.

Clinical Notes:
MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

OBSERVATIONS ON ERYTHEMA NODOSUM.

BY H. W. SYERS, M.A., M.D. CANTAB.,
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THERE is a fixed belief—at all events this is the opinion that would be formed by anyone who takes the trouble to refer to text-books—that the connexion between acute rheumatism and erythema nodosum is a very definite and, indeed, close one. Yet an appeal to personal experience—that appeal which is so seldom made—will show that the belief in this link uniting the two maladies is altogether groundless. I have been interested in this question for a long time and have made observations on the nature and affinities of erythema nodosum in a very large number of cases extending over a long series of years. My experience has been that erythema nodosum has nothing whatever to do with rheumatism, either acute or chronic. In my cases rheumatism had never preceded or followed the cutaneous lesion, joint pains being entirely absent throughout its course. In every case a most careful examination of the heart was made, but the result was in every instance negative, there being no evidence whatever of valvular or other heart disease. It was equally impossible to associate erythema nodosum with other morbid general conditions, and from this point of view the malady should undoubtedly be regarded as *sui generis*.

But there is one cutaneous malady to which the symptoms of erythema nodosum are certainly closely allied—urticaria. Not long ago I saw a middle-aged woman who for four days had been suffering from a rash giving rise to much irritation. The characteristic appearances of erythema nodosum were slightly marked over the shaft of the tibia, but on the extensor surfaces of both forearms the rash was very well developed and quite unmistakeable. At the same time examination of the neck showed the presence of urticarial wheals situated just where the collar presses. If the investigation had been limited to that of the rash on the neck there can be no doubt as to the diagnosis which would have been made; that diagnosis would certainly have been urticaria. These patches were anæmic in the centre and were, according to the patient's statement, extremely fugitive. It is worthy of note, too, in this connexion that the skin generally was extremely irritable and that "dermographism" was well marked. In this case, at all

[1] THE LANCET, May 29th, 1886, p. 1012—"A Case of Rheumatic Hyperpyrexia, with Nervous Sequelæ, simulating Multiple Sclerosis."

events, there can be no doubt that the clinical features of erythema nodosum and of urticaria were combined in one and the same patient. But such cases are not so very rare. I have met with them several times. The deduction to be drawn from these observations is clearly that the alliances of erythema nodosum are with urticaria and that the malady has nothing to do with rheumatism, acute or chronic.

As regards the distribution of the lesions in erythema nodosum it is generally considered that the rash is more or less confined to the lower extremities, its seat of election being the front of the tibia, yet in my experience it is by no means unusual to meet with the characteristic appearances on the flexor and extensor surfaces of the arms and forearms as well as the legs and thighs. In a few instances I have found the lower extremities to be practically free from the rash which was almost entirely confined to the arms and forearms.

It is scarcely necessary to say that the treatment of this malady by salicylates or by anti-rheumatic measures generally is a perfectly futile proceeding. The relations of the affection are certainly not with acute rheumatism; hence it is not surprising that therapeutic measures adapted to the management of that malady are altogether fruitless in this disease. Most important of all details of treatment is rest in the recumbent position and the use of lead and opium lotion may be agreeable and soothing to the patient. But when severe pain is present warmth seems to be the most efficient method of relieving it. Internally quinine may be administered, but it is more than doubtful if any drugs control the course of the malady.

In view of the close relationship existing between erythema nodosum and urticaria it is scarcely necessary to insist upon the importance of attention being devoted to the diet, the condition of the stomach, and the state of the bowels.

Wimpole-street, W.

A CASE OF CHRONIC PULMONARY TUBERCULOSIS TERMINATING IN ACUTE SURGICAL EMPHYSEMA.

BY J. F. HODGSON, M.B., CH.B. VICT.,
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IT is probably a rare occurrence for a case of chronic pulmonary tuberculosis to terminate in acute surgical emphysema. Such a state of things was found in the case of a patient in the Halifax Union Poor-law Hospital.

The patient was a man, aged 41 years. He had been phthisical for 25 years and presented all the signs of chronic pulmonary tuberculosis. When I saw him on the day of his death he was suffering excruciating pain in the region of his left shoulder. A slight emphysematous puffiness on the left side of his neck was all that could be made out then. The emphysema was very acute, two and a half hours only elapsing between the appearance of the first symptom and death. The patient, naturally a very thin man, soon became enormously distended. The emphysema was general, the skin all over the body being very tightly stretched.

At the post-mortem examination on opening the thorax the right lung was found to be fixed to the chest wall in places by old adhesions. The lung itself showed evidence of old-standing phthisical lesions. The left pleural cavity was entirely obliterated, it being quite impossible to separate the lung from the chest wall. On attempting to do this there was disclosed, situated at the posterior portion of the apex of the left lung, a cavity of the size of a pigeon's egg. Projecting into this cavity was a sharp spicule of bone. A portion of the thick cap of pleura covering the apex of the left lung was necrosed opposite to the third left rib. The inflammatory process had spread to the bone and so weakened it that it had snapped about two inches from its vertebral end. Very little force must have sufficed for this, as the patient was kept in bed and had very little cough.

I am indebted to Mr. J. F. Woodyatt, the principal medical officer, for permission to publish the case.

Halifax.

A SERIES OF CASES OF JAUNDICE IN THE FŒTUS.

BY G. FRANCIS SMITH, M.R.C.S. ENG., L.R.C.P. LOND.

IT is no uncommon thing to meet with a mild attack of jaundice in the newly-born infant, but I believe that the same condition in the fœtus is rare, and still more so when the resulting poisoning causes death, as described in the following cases, all children of the same mother.

Four years ago a patient under my care, then aged 29 years, was delivered of a male child who was free from jaundice and who is now living. At the age of two years he had a very severe attack which at the time I attributed to obstructive catarrh of the bile-ducts. Three years ago the same woman had another boy born. The child was full-time but stillborn. He was intensely yellow, as were the liquor amnii, the membranes, and the placenta, all of them being deeply stained with bile. Death had presumably occurred one week before birth. Two years ago another boy was born and the same condition of the liquor amnii and membranes obtained. The child, who lived three days, was green at birth and became more so afterwards. Symptoms of bile-poisoning supervened, terminating in coma. One year ago a girl was born. Here again the same condition prevailed, only that the child lived five days. On June 26th, 1902, another boy was born. The liquor amnii was less dark and the child was less stained than on the previous occasions; but here, again, life seemed to flicker a few hours after birth. The child would not take the breast, cried pitifully and moaned, gradually became comatose, and died on the third day.

In none of these cases was there obstruction to the flow of bile into the intestines, for the first and subsequent motions were deeply bile-stained. The mother had one attack of jaundice some three and a half years ago whilst pregnant with the child that was stillborn. She is otherwise healthy though fragile-looking. The father is the picture of health and strength and the family history is good on both sides. I am utterly at a loss to account for these strange cases and I cannot even suggest a probable cause of the jaundice, or rather the excessive secretion of bile, which in each case was present before birth and was the direct cause of death.

Watford.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Proœmium.

WESTMINSTER HOSPITAL.

A CASE OF SPLENIC LEUKÆMIA TERMINATING IN TUBERCULOSIS.

(Under the care of Dr. W. MURRELL.)

THE association of tuberculosis with splenic leukæmia is so rare that it is very desirable that every case in which these two conditions coexist should be published. The completeness with which the details of the following case are recorded greatly enhances its value.

A woman, aged 21 years, was admitted into Westminster Hospital on July 9th, 1901, complaining of general weakness and debility. She stated that she was perfectly well until the previous September, when after an attack of influenza she noticed a swelling in the abdomen on the left side. Three months later she had rheumatic fever with which she was laid up for eight weeks. Failing to recover her strength and experiencing some discomfort from the swelling she went to the Charing Cross Hospital, where she was treated with arsenic, iron, and galvanism with benefit. She stated that both her father and mother were living and well. She had four sisters, all of whom suffered from anæmia, and two brothers who were in good health. Her mother's brother died from phthisis at the age of 35 years and two of her maternal aunt's children died from the same disease.

On admission, and for some days after, her temperature varied from 100° to 101° F. She was pale but not markedly so, and there was dyspnœa on exertion. There was a considerable amount of pigmentation, especially of the abdomen and in the neighbourhood of the axillæ, nipples, and groins. There were brown pigment spots ranging in size from that of

a pin's head to that of a split pea on the arms and there were similar spots scattered over the face. There were no patches of pigment on the mucous membranes. The spleen was felt as a smooth, firm, hard tumour extending anteriorly to the umbilicus and downwards well into the hypogastric region; there was a tender spot at the margin of the ninth and tenth ribs and the notches on the anterior border could be felt without difficulty. The circumference of the abdomen at the umbilicus was 31 inches and there was no ascites. There was no enlargement of the cervical, axillary, or inguinal glands and there was no tenderness of the bones. The red blood corpuscles numbered 4,735,000 per cubic millimetre and the white 44,000, the latter consisting of finely granular oxyphile cells 51 per cent., coarsely granular 4 per cent., hyaline cells 15 per cent., lymphocytes 9 per cent., and myelocytes 26 per cent. These percentages are only approximately correct, as it was found impossible, from the large number of transitional forms observed, to differentiate the varieties with any approach to certainty. There was no epistaxis, menorrhagia, or other form of hæmorrhage, and there was no retinitis. She had a faint apex systolic murmur. The urine was acid, of specific gravity 1032, and contained no albumin or sugar. It was found that 100 cubic centimetres of urine contained 2·5 grammes of uric acid. The patient was kept in bed and under close observation until May 21st, 1902, when she died. During the last few days of life there were indications of œdema of the lungs with consolidation at the left base. There was very little cough and no expectoration. The progress of the case is best seen by the following analysis of the symptoms and physical signs.

Temperature.—The temperature was taken six times in the 24 hours. For the first month it was rarely above 99°, although occasionally it rose to 101° at 11 p.m. In August and September it ranged from 97° or 98° in the morning to 102° in the evening. After this there was a long period of quiescence in which the temperature rarely rose above 99°. In January and February it ranged daily from 98° to 101·8°. In March and April it was persistently high, rarely falling below 101°. During the last week of life it varied from 101° to 102·6°, the pulse being from 120 to 130 and the respirations from 40 to 44 in the minute.

Blood.—The blood was examined from time to time by Dr. Lazarus-Barlow, Dr. Bertram Abrahams, and Mr. E. Rock Carling, and the following data were obtained:—

Date.	Time.	Erythrocytes per cubic millimetre.	Leucocytes per cubic millimetre.	Hæmoglobin value per cent.
July 24th, 1901 ...	11.30 A.M.	4,125,000	71,000	85
August 10th ,, ...	4 P.M.	3,127,000	192,000	61
Sept. 11th ,, ...	2 P.M.	3,780,000	220,000	45
Oct. 17th ,, ...	3.15 P.M.	4,390,000	150,000	64
,, 20th ,, ...	2 P.M.	4,030,000	20,000	56
,, 27th ,, ...	3 P.M.	2,850,000	29,500	55
Nov. 4th ,, ...	3.30 P.M.	3,475,000	22,900	60
April 5th, 1902 ...	—	—	167,000	—
May 14th ,, ...	1.45 P.M.	2,660,000	16,200	—

The percentage of the different forms of leucocytes varied much from time to time. For example, on Oct. 20th it was as follows: small lymphocytes, 10 per cent.; large lymphocytes, 5 per cent.; myelocytes, 20 per cent.; polymorphonuclears, 45 per cent.; and eosinophiles, 20 per cent. Seven days later the following figures were recorded: small lymphocytes, 3 per cent.; large, 3 per cent.; myelocytes (chiefly eosinophilous), 44 per cent.; polymorphonuclears, 30 per cent.; and eosinophiles, 20 per cent. The sudden fall in the number of leucocytes from 150,000 on Oct. 17th to 20,000 on the 20th was coincident with the appearance of the catamenia on the evening of the 17th and a higher temperature on the 18th and 19th than had been recorded for some days previously. In the final count on May 14th, when the leucocytes had fallen to 16,200, the percentages were as follows: finely granular, 45; lymphocytes, 9; myelocytes, 7; basophile, 7; and hyaline, 38. A large proportion of those classed as "finely granular" were atypical as to nucleus. Speaking generally of the blood observations made throughout the case it may be said that the great increase was in cells of large size, presenting a large badly staining circular or oval nucleus and in the number of very minute granules which stained with eosine. The fall in the number of myelocytes towards the end was very noticeable. On Oct. 27th the differential count per cent. was 44, on Nov. 4th it was 20, and on May 14th it was only seven. The polymorphonuclears on Nov. 4th were 25 per cent. and on May 14th they were 45 per cent.

Spleen.—The spleen continued to increase in size until the middle of January when it was two inches to the right of the umbilicus and extended downwards almost to Poupart's ligament. In then rapidly diminished in volume until on April 25th, 1902, it was two inches to the left of the umbilicus and proportionately smaller in other directions.

Hæmorrhages.—From February onwards the patient suffered from extensive subcutaneous hæmorrhages chiefly on the lower extremities, and the right knee was red and painful. In April the extraction of a tooth was followed by a not unusual amount of bleeding. The eyes were frequently examined by Mr. G. Hartridge. In July, 1901, the fundi were normal, in December the retinal veins were large and tortuous, three times the size of the arteries, and the discs showed a few hæmorrhages in the periphery. In March the retinal vessels were extremely tortuous and much enlarged, and there was some increase in the amount of hæmorrhage. The ears were examined but there was no deafness and nothing abnormal was found.

Pigmentation.—The pigmentation noticed on admission persisted and increased somewhat whilst the patient was taking arsenic. A dark purple line was observed at the base of the nails. In this connexion it may be mentioned that the patellar reflex was absent.

The treatment adopted was as follows. From July 14th to 27th and from August 28th to Sept. 21st the patient had liquor arsenicalis in doses of from three to 15 minims three times a day. From Oct. 2nd to Nov. 9th she had liquor hydrargyri perchloridi in from three- to five-minim doses every four hours. She was then placed on sulphate of quinine in five-grain doses three times a day for some weeks, after which she had sodium meta-vanadate in daily doses of two milligrammes. Probably none of these drugs exerted any real effect on the progress of the disease, but the administration of the small doses of perchloride of mercury was concurrent with the decrease in the number of leucocytes.

Necropsy.—At the post-mortem examination (which was made by Mr. Carling) the pleural sacs were each found to contain about half a pint of clear serous exudate; the pleural membrane was smooth and not ecchymosed. In both lobes of the left lung and in the upper lobe of the right there were patches of consolidation presenting the appearance of grey hepatisation; at the apex of the left was an area of caseation with breaking-down. The larynx, trachea, and bronchi were normal but in the latter there was muco-purulent secretion. The thyroid was normal. In the situation of the thymus there was a mass of tissue. The infra-tracheal glands were much enlarged and pigmented and in one there was a patch of breaking-down caseation. The spleen (which weighed 3 pounds 12 ounces) was firm, resisted cutting, and was brownish-red on section. The capsule was not disproportionately thick. Scattered throughout the organ and here and there on the surface were white masses apparently of miliary tubercle. The liver weighed 5 pounds; it was pale and firm and showed both on the surface and on section miliary tubercles. The adrenals were normal. The marrow of the ribs was pale in colour and small in quantity. That of the lower end of the femur was firm, in part grey and in part red, interlaced with white trabeculæ. On microscopical examination it was found that in the lungs there were abundant evidences of tubercle. The indications in the liver were less decisive but there seemed to be early tubercle. There was no doubt that the patient died from tuberculosis. (The specimens and sections have been kept.)

Remarks by Dr. MURRELL.—Cases of splenic myelogenous leukæmia with pulmonary tuberculosis are extremely rare. There are, I think, only two previous cases on record. It is stated on the authority of Elsner and Groat that clinicians and pathologists of such wide experience as Stengel, Osler, Cabot, Pudden, and Janeway have never seen a case. In 1897 Lichtheim[1] published a case, but it was of the lymphatic and not of the splenic-myelogenous type. It is interesting, however, as a table is appended showing the marked reduction in the number of leucocytes as the tuberculosis progressed. The first count in November, 1896, gave

[1] Deutsche Medicinische Wochenschrift, Sept. 30th, 1897, p. 193.

2,000,000 red blood corpuscles and 250,000 white per cubic millimetre, whilst in the following February the red corpuscles were 3,300,000 and the white were 8900. Under the influence of the intercurrent disease the proportion of leucocytes to erythrocytes diminished from 1 in 8 to 1 in 370. In 1889 Quincke[2] at the Association of German Scientists and Physicians in Heidelberg reported a case of mixed splenic-myelogenous and lymphatic leukæmia in which miliary tuberculosis supervened. There was a marked reduction in the characteristic leucocytes but no differential counts are given. At the same meeting Stintzing[3] reported a case of lymphatic leukæmia in which there was chronic tuberculosis. At the expiration of six months there were the physical signs of cavities at the apices of the lungs and the sputum contained tubercle bacilli. The blood at first showed moderate leukæmia (1 in 100) with a normal red count, but as the tuberculosis progressed the glands became smaller and the proportion of leucocytes was reduced to 1 in 150. Baldwin[4] in the same year reported a case of lymphatic leukæmia with tuberculosis and gave a series of differential blood counts. At the first examination in October, 1897, the erythrocytes were 3,010,000 and the leucocytes were 695,000, whilst in December, 1897, on the day immediately preceding death, there were 2,435,500 red and 959,500 white per cubic millimetre, the proportion of white to red having risen from 1 in 4½ to 1 in 2½. The first case of splenic myelogenous leukæmia with pulmonary tuberculosis was published in 1901 by Henry L. Elsner and William A. Groat[5] of the Syracuse University. The patient, a man, aged 40 years, after being under observation for some weeks, developed phthisis with well-marked physical signs in the lungs and tubercle bacilli in the expectoration. His blood was examined on six different occasions and showed a gradual diminution in the white cells from 320,000 to 121,500 per cubic millimetre and a decrease of myelocytes from 31 per cent. to 17·5 per cent. The second case was published by Arnold Sturmdorf[6] of New York. The patient was a woman, aged 35 years, who developed pulmonary laryngeal and faucial tuberculosis. Blood counts were made during a period of four weeks and showed that each rise of temperature was accompanied by a corresponding increase in the number of polymorphonuclears and a proportionate decrease in myelocytes.

Although phthisis is rare in splenic-myelogenous leukæmia it is not uncommon to meet with an ulcerative process and new formations disseminated throughout the lungs giving rise to small scattered cavities. Lymphoid cells infiltrate the wall of the bronchus and extend into the adjacent pulmonary tissue. Nodules are formed which may coalesce into larger masses, although they rarely undergo caseation. The infiltration may be present in three situations—around the branches of the pulmonary vessels, around the bronchi and alveoli, and beneath the pleura. In the fibrinous areas so formed large collections of bacteria are often found. The diagnosis of tubercle as a superadded affection in leukæmia presents much difficulty. The temperature affords no indication, for it is commonly elevated from the original disease. The patient may have very little cough and no expectoration, and the physical signs may be ascribed to œdema of the lungs or a patch of pneumonic consolidation. A reduction in the percentage of myelocytes with an increase in the polymorphonuclears should excite suspicion.

Of other intercurrent affections in leukæmia erysipelas is the commonest. In a case reported by Richter[7] the patient suffered from an attack of acute rheumatic arthritis, whilst Müller's case[8] was complicated with septicæmia. In the rheumatic patient the condition of the blood remained unaltered, but in the septicæmic case the white cells rose from 180,000 to 400,000 per cubic millimetre, with a marked increase in the percentage of polymorphonuclears. There was a genuine leucocytosis added to a leukæmia. In intercurrent affections such as pneumonia and pleurisy, which in the normal blood produce a leucocytosis, the total number of leucocytes is decreased and may fall below the normal as death draws near.

A point which attracted attention in this case was the extensive pigmentation. Was it due to the arsenic which the patient took before she came under my care or was it to be regarded as an indication that the adrenals were involved? Dr. Robert Muir informs me that in his experience involvement of these organs is rare. Professor Ralph Stockman, who saw the case with me, was of opinion that the pigmentation was due to arsenic and at the necropsy the adrenals were found to be normal. These organs have been found diseased in a few cases of leukæmia. In one they were the seat of caseous change and in another in which they were large and mottled there was some bronzing of the skin. In connexion with the action of arsenic in causing pigmentation of the skin it will be remembered that even small doses in frogs induced desquamation, the cuticle being stripped off readily from every part of the body. This desquamation is observed[9] in as short a period as five and a half hours after the administration of a proportional dose of $\frac{1}{10\frac{1}{2}\frac{1}{7}\frac{1}{7}}$. The histological explanation of the change has been investigated by Emily A. Nunn[10] who has shown that (1) the whole epiderm becomes loosed from the subjacent derm; (2) the cells of the Malpighian layer become incoherent so that the whole layer collapses, its well-known architectural features becoming obscured; and (3) the intermediate layer separates from the Malpighian layer below and from the corneous layer above.

Arsenic is reputed to be of value in the treatment of leukæmia, but in this case it was less efficacious than small and frequently repeated doses of perchloride of mercury. On theoretical grounds it would hardly be expected that arsenic would do much good in splenic leukæmia, for, as R. Stockman and E. D. W. Greig[11] have pointed out, it acts as a hæmatinic by stimulating the bone-marrow. Although it may increase the number of blood corpuscles it does not affect the cause of the disease, and its administration is a purely symptomatic mode of treatment. With regard to vanadium its efficacy is equally doubtful. It is allied in action to phosphorus and arsenic, although there are many points of difference. G. F. Dowdeswell[12] many years ago showed that in animals it produced fatty degeneration of the liver. Recently, Lyonnet, Martz, and Martin[13] in a joint paper, "De l'Emploi Thérapeutique des Sels de Vanadium (Métavanadate de Soude)," have advocated its use in a number of diseases, including anæmia, but apparently not of the pernicious type. They say that it markedly improves the appetite, imparts a sense of well-being and increases the body-weight. They give the sodium meta-vanadate by mouth in daily doses of from one to five milligrammes. The most exhaustive paper on the physiological action of the drug is by John Priestley[14] of Manchester, the result of a research made under the direction of Professor Arthur Gamgee, F.R.S. In this contribution it is shown that vanadium exerts no direct action on the blood. Many French writers on vanadium speak of "les recherches de Platt," evidently being misled by the fact that Priestley was the Platt physiological scholar at Owens College.

[2] Tageblatt der Naturforscher und Ärzte in Heidelberg, 1889, p. 405.
[3] Ibid.
[4] American Journal of the Medical Sciences, 1899, vol. cxvii., p. 656.
[5] Ibid., 1901, vol. cxxi., p. 271.
[6] Ibid., 1901, vol. cxxii., p. 166.
[7] Deutsche Medicinische Wochenschrift, 1895.
[8] Wiener Klinische Wochenschrift, July, 1896.
[9] Ringer and Murrell: Journal of Physiology, vol. i., No. 4.
[10] Journal of Physiology, vol. i., No. 4.
[11] Ibid., vol. xxiii., No. 5.
[12] Ibid., 1878-9, p. 257.
[13] Lyon Médical, 1899, Nos. 9-12.
[14] Transactions of the Royal Society of London, 1876, vol. clxvi., p. 495; THE LANCET, Jan. 15th, 1876, p. 104.

Medical Societies.

OBSTETRICAL SOCIETY OF LONDON.

Puerperal Eclampsia.—Retro-peritoneal Lipoma.—Ovarian Tumour in the Pelvis.

A MEETING of this society was held on July 2nd, Dr. PETER HORROCKS, the President, being in the chair.

Dr. R. H. BELL read a short communication on a case of Puerperal Eclampsia, with Necropsy and Remarks. The clinical phenomena were those usually associated with cases of eclampsia, viz., headache, vomiting, œdema, albuminuria, and, finally, fits and coma. It was noted, however, that the urine was little, if at all, diminished in amount, and that albumin, though always present, was never in larger proportions than one-sixth. The presence of jaundice in the later stages of the illness was also mentioned, and reference was made to other cases in which this symptom was present.

A short account followed of the necropsy and microscopical appearances of the liver and kidneys, both of which, but especially the former, showed marked degenerative changes such as have been described by Pelliet and others as associated with cases of eclampsia. Their close resemblance to those seen in the early stages of acute yellow atrophy was dwelt upon, but the fact was mentioned that during life no diminution of the size of the liver was made out, and that post mortem the organ weighed 55 ounces. Dr. Bell suggested that the case was interesting as showing the close affinity of eclampsia to acute yellow atrophy occurring in a pregnant woman, the post-mortem appearances being those associated with an acute toxæmia. Some experiments with regard to the toxicity of the blood conducted by Mr. C. G. Seligmann were then recorded. The method employed was the subcutaneous injection of serum into guinea-pigs. Control experiments were made with the blood from cases of chronic uræmia in the stage of coma, and it was shown that in these cases the serum had by no means the same high degree of toxicity as existed in the case of eclampsia.—Dr. C. J. CULLINGWORTH thought that there was much that was still to be elucidated both about the pathology of puerperal eclampsia and that of acute yellow atrophy of the liver, and it was quite possible that some day both might be found to be capable of being classed under one general heading. The difficulties of such a case as this would then be cleared up, and, indeed, this case might prove valuable as a sort of connecting link, all the more valuable from its having been recorded without any attempt to fit the facts on to some favourite theory. There was just one point on which he should like to ask Dr. Bell a question. The hæmorrhages found in the liver were extensive and remarkable. He was not sure that their extent had been actually measured and recorded in figures, but from his recollection he should say that the larger one had a sectional area of at least three inches by two and a half inches. He feared that he was not a sufficiently expert pathologist to be able to say whether such a condition was ever met with in puerperal eclampsia with kidney lesions only.—Dr. T. W. EDEN said that he thought the case which had been so admirably reported by Dr. Bell was a very important one. It served to support the view, now gaining much favour abroad, that it was possible to divide cases of eclampsia into two principal groups, hepatic and renal. The morbid anatomy of eclampsia had not perhaps received as much attention of late as had been paid to experimental work in connexion with the toxæmic theory of this disorder. But the occurrence of well-defined changes in the liver, consisting chiefly of hæmorrhages and degeneration of hepatic cells, was now well established, and it had, of course, been long recognised that marked changes might also be found in the kidneys. Dr. Bell's case appeared to belong to the hepatic class, and the relation of this class to cases of acute yellow atrophy was one of the most interesting problems connected with the subject. Dr. Bell appeared to sympathise with the view that eclampsia was produced by a toxic condition of the blood. That might be so; but toxæmia after all was only a symptom like eclampsia, and they were therefore no nearer a satisfactory explanation of the pathology of the condition. The real problem that had to be faced was, How did the toxæmia arise? Unfortunately no answer could at present be given to this question. When physiological chemists had succeeded in separating from the blood of eclamptic women definite toxic bodies the properties of which could be accurately studied some progress might be made in settling this very difficult question.—Dr. AMAND J. M. ROUTH rather doubted the diagnosis of acute yellow atrophy in this case owing to the absence of atrophy. He saw a patient, six months pregnant, who was seized with severe vomiting, slight albuminuria, jaundice, and passage of blood per rectum. A diagnosis of acute yellow atrophy was made and the uterus was emptied. The following day puerperal eclampsia ensued and she died, but no post-mortem examination was allowed.—The PRESIDENT did not think that this was an ordinary case of puerperal eclampsia. On the contrary, it was a very unusual one, for, on the one hand, the urine was never loaded with albumin, and, on the other, albumin was not quite absent. Again, there was marked jaundice, which was uncommon in puerperal eclampsia. Hence although the pathological changes in the liver and other viscera were of great interest it did not follow that they would be found in ordinary cases. He deprecated the use of the term "puerperal toxæmia," for it was founded upon a still unproved theory and gave no picture of the case like the term "puerperal eclampsia" did.—Dr. G. H. DRUMMOND ROBINSON referred to a case in which he had made some experiments with the blood serum of a patient who, during her first pregnancy, had developed jaundice and albuminuria. Considerable quantities of the blood serum from this case were injected into guinea-pigs without producing any effect. This patient had no fits and made a good recovery after the induction of premature labour.—Dr. WILLIAMSON considered that under the term "eclampsia" they grouped together at the present time conditions which had very little in common with one another. On the one hand there was a well-marked group of cases in which the patients were the subjects of chronic nephritis. In these patients what they termed "eclampsia" was really a uræmic condition, and though modified by pregnancy still it differed in no essential from uræmia occurring in a non-pregnant woman. But there was another and an entirely different class of case in which the convulsions appeared to depend upon an acute toxic poisoning the stress of which fell more especially upon the liver, and the kidneys might almost escape damage. In support of this contention he quoted a case recently seen in which 40 eclamptic fits occurred within 24 hours of delivery. The urine was not reduced in amount, the percentage of urea never fell below 1·6 per cent., only a slight cloud of albumin was present, and no tube casts were found. After the cessation of the fits, however, the patient became deeply jaundiced and bile was found in the urine. The patient recovered.

Mr. ALBAN H. G. DORAN exhibited a Retro-peritoneal Lipoma, weighing 13 pounds 12 ounces, removed from a woman, aged 47 years. The omentum was not involved. The right kidney lay on the pelvic brim in a lobe of the tumour which was supplied with blood by large vessels arising close below the pancreas. The patient rallied from the operation but died 38 hours later from suppresion of urine. Mr. Doran noted that surgically this kind of tumour must be distinguished from the purely omental type (Meredith and perhaps Lannander) and from lipoma of the broad ligament (Treves), varieties which allowed of easy and safe removal. The results of extirpation of these absolutely retro-peritoneal lipomas were very unsatisfactory. Ferrier and Guillemain questioned on good grounds whether it was justifiable to attempt their removal when their nature was recognised at an exploratory operation.—The PRESIDENT, Dr. CULLINGWORTH, Dr. HERBERT R. SPENCER, and Dr. GILES took part in the discussion.

Mr. J. W. TAYLOR read the notes of a case in which delivery at full term had been obstructed by the presence of an Ovarian Tumour in the Pelvis. After considering the relative advantages of abdominal and vaginal ovariotomy it had been decided to make a posterior vaginal section and to perform ovariotomy during the progress of labour. This was successfully accomplished and then delivery had been completed by the aid of forceps without delay. The patient had made an easy and very satisfactory recovery.—The PRESIDENT congratulated Mr. Taylor on the happy termination of his case. But he could not help feeling that he had been lucky in finding this ovarian cyst so simple and so free from adhesions. Had it been a multilocular cyst with myriads of small cysts, had there been a lot of adhesions extending to the bowel, or had the pedicle been difficult to reach he might have been obliged to open the abdomen after all. He related details of a case in Guy's Hospital where a tumour occupied the pelvis and obstructed labour. It was under such great pressure that it was thought to be a solid tumour. There was no fluctuation and it felt as hard as any fibroid. A needle was pushed in and pus was withdrawn. Then an incision was made and a loculus was emptied, a septum was punctured and another loculus was emptied, and then a third one, after which it was found possible to deliver. Subsequently another loculus of this multilocular suppurating ovarian tumour opened and discharged near the navel and the patient left the hospital and was lost sight of. After trying operations per vaginam he must say that he preferred to tackle these tumours through the abdominal wall. One great danger was the pedicle which sometimes tore when being pulled down in order to reach it from the vagina.—Dr. SPENCER thought that abdominal ovariotomy was preferable to vaginal ovariotomy in the treatment of these cases. Mr. Taylor seemed to have chosen vaginal ovariotomy partly because he would probably have to evacuate the pregnant uterus or do a Cæsarean section before he could get

at the imprisoned tumour." It could not be too strongly insisted upon that Cæsarean section was quite unnecessary. In Mr. Taylor's case the tumour, which he understood contained two or three pints, would certainly have reached above the brim of the pelvis and might have been opened there possibly without much difficulty. But in any case by enlarging the incision (and it was surprising through how small an incision the pregnant uterus would pass if taken out one cornu first) the tumour could have been easily dealt with, and then forceps could have been applied and the uterus returned. The vaginal operation appeared to him (while having some slight advantages alluded to by Mr. Taylor) to be, on the whole, inferior in that it made a wound in the vagina but did not permit inspection of the other ovary or allow of such careful treatment of adhesions or of the pedicle. Mr. Taylor had himself found difficulty in dealing with the pedicle in that he had tied it by encircling it with a ligature applied beyond a pair of forceps and had to cut the ligature short by the sense of touch. This appeared to him to be not free from danger of slipping of the ligature. Cases had been recorded of slipping of the ligature and such cases showed the necessity of careful separate ligation of the ovarian vessels in the pedicle in cases of ovariotomy during pregnancy, which could only be satisfactorily performed by the abdominal operation.—Dr. HEYWOOD SMITH said that about 17 or 18 years ago he had a similar case under his care. He tapped the ovarian cyst per vaginam and delivered the woman. It was not till she was between three and four months pregnant again that she presented herself. He then did ovariotomy during the pregnancy; the patient did well, went her full time, and subsequently had other children.—Dr. M. HANDFIELD-JONES recorded two cases of suppurating dermoid tumour which had obstructed delivery at full term. In both cases he had thought it best to open the abdomen and remove the tumours by the abdominal route. While performing these operations he had been struck by the difficulty which would have been encountered if he had endeavoured to effect the removal by the vaginal route, for in both these instances the upper wall of the tumour had been densely adherent to coils of small intestine, and great risk of tearing the bowel would have arisen if an attempt had been made to withdraw the growth through an opening in the vagina. The plan of removing the tumour by the abdominal route and then replacing the pregnant uterus and effecting delivery by the natural passages commended itself to him as by far the safest and most scientific procedure. He thought that Mr. Taylor was to be congratulated equally on the success of his operation and the good luck which had attended it.—Mr. TAYLOR, in reply, said that while acknowledging the good fortune for which every surgeon should be grateful he wished the Fellows to understand that the operation was deliberately chosen and that this choice was made in consequence of an experience of vaginal cœliotomy extending now over some nine or ten years, during which he had repeatedly removed small ovarian cysts, diseased tubes, small dermoid tumours, and extra-uterine pregnancies by the vaginal method. As experience widened it could be generally judged what cases were suitable for vaginal section and it was only in the minority of cases (possibly some 5 per cent.) that an operation begun by the vaginal had to be finished by the abdominal route. Even when this was necessary he had found that the additional vaginal opening was no disadvantage, being often exceedingly useful for drainage. The chief difficulty of the vaginal operation was undoubtedly the comfortable securing of the pedicle but (as a previous speaker had already stated) the surgeon could leave a pair of forceps on the stump, if necessary, with perfect safety. In addition, the open method of treating the vaginal wound (with an iodoform gauze drain) precluded the possibility of any serious hæmorrhage occurring without the immediate knowledge of those in attendance. As Dr. Spencer was describing his case (requiring a large abdominal incision, eventration of the pregnant uterus, and delivery of the child while the uterus was still outside of the abdomen) he could not help unfavourably contrasting the operation as described with the simple, direct, and comparatively easy method employed in his own case. Moreover, in his own case the patient recovered with no abdominal wound or cicatrix. In the other operation a large wound was made and if this were closed hurriedly (a proceeding almost unavoidable under bad surroundings) a hernia of the cicatrix was extremely likely to develop later. He would in no case use simple puncture or aspiration by the vagina. The danger of fouling the peritoneum by oozing from a pus-sac or dermoid cyst contra-indicated this practice, and in every case that recovered an operation had to be done later. The method described, Mr. Taylor believed, formed a legitimate and very useful extension of operative practice which, in suitable cases, satisfied the requirements of good surgery much better than did the more usual method of operation by abdominal incision.

OPHTHALMOLOGICAL SOCIETY.

Detachment of the Retina.—Convergent Strabismus.—Exhibition of Specimens.

AN ordinary meeting of this society was held on July 4th, Mr. CHARLES HIGGENS, Vice-President, being in the chair.

Mr. HIGGENS described a case of Detachment of the Retina in which complete recovery took place. The patient was a woman, aged 36 years, who had been under his care since 1892 for myopia of high degree and had in 1899 nearly lost the sight of the left eye from detachment of the retina. In May, 1901, she first noticed obscuration of the upper part of the field in the right eye. There was a doubtful history of injury some weeks before. Detachment of the retina at its lower part was discovered. She was treated for nearly a month in hospital, lying in the prone position, with mercurial inunction and vapour baths, and she left with some improvement. Two weeks later her sight returned whilst lying down in the afternoon: she went to sleep for some hours and on waking found the sight as good as it had been before the detachment occurred. Ophthalmoscopic examination showed some floating shreds in the vitreous but no sign of detachment. On Jan. 23rd, 1902—nearly nine months since the detachment appeared and eight months since the recovery of vision—she could see with correction $\frac{6}{9}$ and J. 1. The field was almost normal and there was no sign of detachment.

Dr. E. H. CARTWRIGHT also read notes of a case of Detachment after Cataract Extraction. The patient was a man, aged 72 years, who had had a cataract removed from his eye without iridectomy in February, 1899. Subsequently two capsulotomies had been done. In April, 1900, Dr. Cartwright first saw him and with his correction he could read $\frac{6}{9}$ and J. 1. In January, 1891, he again attended with the history that two weeks previously the sight of the right eye had suddenly failed late one day; everything looked at appeared red and the sight was lost below the horizontal meridian. The sight had got gradually worse since. The vision in the upper part of the field was equal to counting fingers at six inches. Left vision = P. L. Almost complete cataract was present. Projection was good. In the right eye the upper half of the retina was detached and this obscured the view of the disc. The urine and heart were normal. The patient was kept in bed and on Jan. 9th a scleral puncture to the outer side of the superior rectus tendon as far back as possible was made and from this some clear watery fluid exuded. On Jan. 25th the disc was visible but vision was not improved. After this he was discharged but was seen from time to time with gradually improving vision until in September, 1901, he could read $\frac{6}{6}$ and J. 2. The field was normal except on the temporal side. On Sept. 27th, 1901, the left cataract was extracted and on Nov. 29th, 1901, his vision was as follows with correction: right vision = $\frac{6}{6}$ and J. 1; left vision = $\frac{6}{9}$ and J. 1.—Mr. N. M. MACLEHOSE mentioned a case which he had seen of detachment due to a blow in which recovery had taken place.—Mr. G. HARTRIDGE thought that the experience of Mr. Higgens and Mr. Cartwright was exceptionally good, for he himself had never seen a case of such complete recovery.—Mr. JESSOP remembered only one case in which recovery had resulted and this was reported by Mr. E. Nettleship and Mr. J. Tweedy to the society some years ago. He had seen temporary improvement but it never lasted.—Mr. C. DEVEREUX MARSHALL said that the only case of complete recovery which he knew was the one referred to by Mr. Jessop. In a case which he had had, where in the second eye the retina had become detached, a good result was obtained, and this lasted for several months but it recurred and the patient became quite blind. He also remembered another case, due to a blow, in which the retina became re-attached, but as he had been unable to trace the patient after the first few weeks following the accident he had not thought it well to

publish it as a cure.—Mr. HIGGENS, in reply, said that he doubted very much whether the treatment adopted in his case had anything to do with the recovery of vision.

Mr. SYDNEY STEPHENSON read a note on some cases of Convergent Strabismus treated by lengthening the tendon of the internal rectus and exhibited the patients. The method adopted was that of cutting the tendon of the muscle either obliquely or in some other manner by means of which the cut ends could be united in such a way that the muscle was thereby lengthened to the required degree. He had operated upon six cases with gratifying results.—Mr. HIGGENS thought that this method was likely to be of considerable benefit.

The following card specimens were shown :—

Mr. J. H. PARSONS: (1) Gumma of the Ciliary Body; (2) Metastatic Carcinoma of the Choroid; and (3) Annular Leuco-Sarcoma of the Ciliary Body.

Mr. R. W. DOYNE: Rupture of the Eyeball with Prolapse of the Iris and no Dislocation of the Lens.

DERMATOLOGICAL SOCIETY OF LONDON.—A meeting of this society was held on July 9th, Dr. J. J. Pringle, being in the chair.—Dr. T. Colcott Fox showed a private patient who was suffering from Generalised Alopecia. The patient was a young man in perfect health but of a somewhat nervous disposition, and no cause for the onset of the disease had been discovered. The history showed that five years previously a single spot of alopecia areata had occurred on the right side of the chin, before which the patient said that he had had a very "ugly pimple" in the same situation and lasting several weeks. When shown the head was almost entirely bald, only a few small tufts of dark hair remaining here and there. There was a bald patch in the centre of the right eyebrow and most of the hair of the face had gone. The patient was naturally a very hairy man and consequently the patches of baldness which were observable on the chest, the hypogastric region, and the upper part of the calf were very striking and sharply defined. Dr. Colcott Fox said that he exhibited the patient for two reasons—first, because although alopecia universalis developing from alopecia areata was not very uncommon it was not often that the opportunity was had of observing the actual round areas on the trunk and limbs; and secondly, he thought it of interest that, although on the scalp and to a certain degree on the face the oily condition and follicular plugs of Sabouraud could be demonstrated, on the trunk and limbs no trace of any seborrhœic progress could be detected.—Dr. G. F. Still and Dr. A. Whitfield showed a child a little more than a year old suffering from a Bullous and Hæmorrhagic Eruption. The history was rather indefinite, the mother stating that the child had had an eruption of blisters in the first week of its life. The present eruption had existed for a little over five months, thus leaving a period of entire freedom of about seven months. The child seemed to be quite well, but owing to the intense itching of the eruption at night its sleep was often much broken. The eruption was distributed over the whole trunk and extremities, sparing the face entirely and falling with greatest severity on the buttocks, the extensor surfaces of the knees and elbows, and the hands and feet. The rash was extremely polymorphous. On the elbows and knees were large hæmorrhagic bullæ reaching to the size of an acorn and in addition to these there were a good many small vesicles. The whole of the outer surface of each thigh was thickly set with a fine, papular eruption consisting of millet-seed-sized papules with a flat and shining top. On the loins and buttocks there were large thumb-nail-sized erythematous macules with a dark and firm papular centre. On the hands and feet were small lichenoid papules and pustules and scabs. In addition to this, when first seen there were two scratch marks which were mapped out by the formation of a line of small vesicles, but these had flattened down. The mucous membranes were not affected. Dr. Whitfield said that he thought everyone would agree with his diagnosis of lichen urticatus for the lesions of the maculo-papular type and the scratch marks. The question was whether there was anything beyond this. He reminded the members that the demonstrations and writings of Dr. Colcott Fox had made them all familiar with the occurrence of bullæ in lichen urticatus, but he had never seen a case resembling the present one. The idea had occurred to him that the child might be the subject of epidermolysis bullosa, and he could not definitely exclude this. On the whole, however, he felt inclined to believe that this was not present for the reason that the child had had apparently an immunity lasting for seven months, during which time no blisters had appeared.—All the members agreed as to the presence of the lichen urticatus but as to the coincidence of two diseases no one liked to offer an opinion.—Dr. Colcott Fox pointed out that in his experience the bullæ in lichen urticatus were almost invariably situated on the hands or feet.—Dr. Pringle showed: 1. A child, aged three years, suffering from a Relapsing Bullous Eruption. The eruption had appeared first in September, 1901, and had disappeared in May, 1902, reappearing in June. On exhibition the child showed a generalised eruption which commenced as small pearly vesicles. The original vesicle flattened down and became surrounded by a new ring of similar lesions, and by the continuation of this process large circles and polycyclical figures were produced. The mucous membranes were unaffected and there was no itching. In spite of this absence of itching Dr. Pringle offered the diagnosis of dermatitis herpetiformis which all the members accepted. 2. A young man suffering from a Miliary Papulo-pustular Eruption. The history was that the man had had a sore on the penis seven weeks previously, the sore appearing one week after connexion, lasting two weeks, and disappearing under local antiseptic treatment only. Slight adenitis had appeared in one groin, but had gone down completely at the time of exhibition. On the other hand the patient had suffered for some time from tuberculous adenitis in the neck, and recently some of the glands had suppurated and had been surgically treated at Middlesex Hospital. At the time when he was presented to the society he showed an eruption of fine, purple, firm papules, each in most cases being surmounted by a minute pustule. The eruption was situated at the pilo-sebaceous follicles and distributed chiefly on the extensor surfaces of the upper arms and over the shoulder blades. The case was brought forward to show the difficulty in view of the complicated history of distinguishing the syphilide from the tuberculide, and Dr. Pringle asked if any of the members would tie themselves down to a definite diagnosis.—There was a great deal of discussion, and although most members inclined to the view that the disease was in all probability syphilis few cared to commit themselves to an absolute opinion.—Dr. J. Galloway brought forward a woman, aged 36 years, in apparently good health, who showed a peculiar line of Telangiectases across the chest and back at the level of the fourth dorsal vertebra, above which there were slight thickening, œdema, and pigmentation of the skin. The fingers of both hands were uniformly thickened and very hard the whole process being essentially chronic in its progress.—The relationship of the disease to scleroderma was discussed and the whole case was admitted to be entirely anomalous in its characters.—Dr. Whitfield suggested that the hands should be radiographed as the sensation given to the fingers was that of a true barrel-shaped enlargement of the phalanges, and he reminded the members that a case had been published by Mr. C. B. Lockwood in the Transactions of the Clinical Society of London (1897) in which there were features somewhat resembling this case.—Dr. H. Radcliffe Crocker brought forward again a man shown at the April meeting suffering from Lupus Erythematosus of the face and hands. The patient was exhibited again to show the effect of the administration of salicin in 20-grain doses three times a day, under which treatment all the infiltrated erythema had subsided so that it could hardly be said that any active disease still existed.—Dr. E. G. Graham Little showed a baby seven months old exhibiting a good example of the Annular Syphilide. The signs of the disease had first appeared one week previously to exhibition, and consisted of several small infiltrated rings of about the diameter of a sixpenny-piece, situated on the anterior and internal surfaces of the thighs. On the posterior surfaces of the thighs were some large lenticular syphilitic papules, and there appeared to be condylomata commencing round the anus. The history given at first was that the child had had no rash before this one, but closer questioning revealed the fact that there had been scaling of the palms and soles, which still showed a similar condition, soon after birth.—Dr. J. H. Sequeira showed a man, aged 74 years, with an Ulcer of the size of a florin on the Back of the Neck. This ulcer had existed for 26 years and was of a bright-red colour with slightly everted and somewhat infiltrated edges. There was a large, hard gland on the right side of the neck, rather higher than might have been expected, in connexion with the growth. The diagnosis offered was that of a slowly growing

malignant ulcer of epithelial type, but whether rodent ulcer or epithelioma neither Dr. Sequeira nor any of the members cared to state definitely. The growth would be removed and reported upon.—Dr. Sequeira also showed a classical example of Xerodermia Pigmentosa in a little girl, aged five years. Pigmentation had been noticed at the age of 10 months and a wart been removed from the face when the child was three years of age and two more after she had reached her fourth year. When shown the skin of the face was generally atrophic and was marked by numerous freckles and small telangiectases. There were also two large warty growths on the left side of the bridge of the nose with pearly rolling edges, suggestive of burrowing of the epithelium. These would be removed and reported on later.—Dr. S. E. Dore showed three cases of Psoriasis following vaccination. In one case the attack was the first from which the patient had ever suffered, in another attacks had occurred before, and in the third the history was doubtful. All the patients were adults and in all the rash had started immediately after the healing of the vaccine vesicles, appearing at the sites of the lesions first.

NORTH-EAST LONDON CLINICAL SOCIETY.—This society held its annual general meeting at the Tottenham Hospital on July 3rd, Dr. F. J. Tresilian, the President, being in the chair.—The report of the council and the treasurer's report were read and adopted.—The following gentlemen were elected officers of the society for the session 1902-3. President: Dr. F. H. Daly. Vice-Presidents: Dr. C. T. Aveling, Mr. Walter Edmunds, Dr. F. de Havilland Hall, Mr. J. Langton, Dr. E. Hooper May, Mr. J. S. Sequeira, Dr. T. Gilbart Smith, and Dr. F. J. Tresilian. Honorary treasurer: Dr. Arthur E. Giles. Council: Mr. C. Billson, Dr. G. P. Chappel, Dr. H. Corner, Dr. S. E. Dore, Dr. J. W. Hunt, Dr. R. Murray Leslie, Dr. G. Norman Meachen, Dr. D. Petty, Dr. A. S. Ransome, Mr. R. F. Tomlin, Dr. A. J. Whiting, and Dr. C. H. Wise. Honorary secretaries: Mr. H. W. Carson, 26, Welbeck-street, W., and Mr. C. E. Hutt, Bruce-grove, Tottenham, N.—After the meeting tea was served in the grounds of the hospital to a large number of members and their friends, the presence of ladies adding much to the success of the proceedings.

Reviews and Notices of Books.

Sewage and the Bacterial Purification of Sewage. By SAMUEL RIDEAL, D.Sc. Second edition. London: The Sanitary Publishing Co., Limited. 1901. Pp. 306. Price 14s.

THE remarkable development of the bacterial treatment of sewage has soon rendered new editions of standard books upon the subject necessary. Dr. Rideal's excellent treatise appeared in the press early in 1900 and hardly a year passed before he felt compelled to prepare a second edition, not only on account of the rapid sale and early exhaustion of the first edition but because our knowledge of the bacterial processes both in theory and in practice has advanced considerably in that short period. The statement of principles such as those of the stages of purification remains, of course, the same since the conditions essential to the disposal of sewage by wet combustion are now understood. Effectual, however, as the mere destruction of effete organic matters may be, the question is still open as to whether pathogenic organisms lose their vitality or even suffer a diminution in virulence under the conditions prevailing in a biological filter. It is well known that Dr. A. C. Houston, at the instance of the London County Council, has made some interesting experiments upon this point. From his results as a whole he was not able to say with certainty that in the cases of the typhoid bacillus and the cholera vibrio they would lose their activity a whit, or that the biological processes at work in the coke-beds would produce any significant alteration in the number of spores of the bacillus enteritidis. The bacillus coli is similarly unaffected, but, as Dr. Rideal points out, though classed as pathogenic this organism can hardly be considered to be so in the ordinary sense of the term. Its presence, however, as Dr. Rideal does not omit to add, serves as an index of the possible presence of other and more objectionable kinds of bacteria. Certainly, as regards the experimental beds at Barking and Crossness it cannot be assumed, according to Dr. Houston's results, that the effluents are more safe in their possible relationship to disease than is diluted raw sewage. Of the chemical purification effected there can be no doubt that it is sufficient to reduce entirely all putrefactive matters. Dr. Rideal points out that in Dr. Houston's experiments the degree of nitrification and aeration was never pushed to a satisfactory point and the conclusion seems to be warranted that the greater the aeration and nitrification the less is the possibility of the survival of pathogenic organisms. Dr. Rideal states that subsequent chemical treatment could be used for sterilising filtrate if necessary. Such reagents, he suggests, might be called "finishers," for by their employment the resulting purified sewage would be satisfactory both from the chemical and bacterial points of view. We assume that the "finisher" would be employed in such a small quantity as not to interfere with river life.

The second edition of Dr. Rideal's eminently practical work was issued just before the interim report of the Royal Commission on Sewage was presented to Parliament in July, 1901. The most remarkable and important conclusion in this report was that "there are cases in which the Local Government Board would be justified in modifying under proper safeguards the present rule as regards the application of sewage to land." Dr. Rideal regards—and we ourselves have expressed the same view—the insistence on final land treatment as decidedly a mistake when the object is only purification. As is well known, it frequently happens, as in the case at Hampton (Middlesex), that an originally good effluent suffers great deterioration by subsequent passage through land.

Dr. Rideal's book will be studied with advantage with regard to both the practical and theoretical aspects of the subject, and an excellent and sound idea of the present position of bacterial methods of purification of sewage will be gained by a careful perusal of its pages. It is undoubtedly a standard work.

Hygiene: a Manual of Personal and Public Health. By ARTHUR NEWSHOLME, M.D., F.R.C.P. Lond., Medical Officer of Health of Brighton, &c. London: George Gill and Sons, Limited. New edition. 1902. Illustrated. Pp. 356. Price 4s. 6d.

THE first edition of this work appeared so far back as 1884 and naturally in preparing a new edition there was a great deal that needed altering. As the book contains much that is of great practical use, presented in a form and manner admirably suited for ready reference, it was very necessary that this store of information should be brought up to date. Indeed, the present edition has been almost entirely rewritten and a considerable amount of new matter has been introduced, notably in regard to dietetics, trade nuisances, meteorological observations, tuberculosis, disinfection, and vital statistics. For instance, one of the recent points raised is Professor Koch's contention that bovine tuberculosis is not communicable to man. This question, Dr. Newsholme very correctly states, is not yet settled and in the meanwhile he considers that the ideal would be to condemn all cattle suffering from tuberculosis. But this involves a serious economical problem and in practice it is not customary to condemn the entire carcass when only one organ is affected. The pig, however, should always be condemned because of the greater tendency of generalisation of tuberculosis in that animal. Because man cannot infect

cattle it does not follow that cattle cannot infect man, and Dr. Newsholme urges that "no tuberculous animal of any kind should be allowed to remain in any cowshed where milch cows are kept." That such measures are necessary and not properly applied is shown by the fact that "the proportion of infected samples found when examinations of milk-supplies have been made in different towns has varied from 10 to 50 per cent." But, fortunately, it is not necessary to boil milk to destroy the tubercle bacilli and the Danish law of 1898 compels every dairy proprietor to heat his skimmed or butter milk, but only to 185° F. A description is given of various apparatus and methods for sterilising milk. In this manner about 60 of the principal problems of hygiene are treated and discussed. A large number of illustrations very materially help to render the meaning clear. Indeed, in such matters as drainage, especially for a beginner who has not yet acquired practical experience of the meaning of technical terms, illustrations are indispensable. Altogether, Dr. Newsholme is to be congratulated on the new issue of his book and it will be a welcome addition to the library of the student of hygiene.

Practical Lip-reading. By E. F. BOULTBEE. London: L. Upcott Gill. 1902. Pp. 112.

THE subject principally dealt with in this little work is the value of lip-reading for persons who have the misfortune to become deaf, or partially deaf, in adult life; the book is very interesting and deals with a somewhat new adaptation of educational endeavour to benefit the large number of adults who being deprived of hearing find themselves to some degree excluded from the ordinary resources of social life. In such cases it is desirable that the patient should learn to read at sight the expression of speech on the lips of the speaker. In the child all speech is acquired by imitation, either through the eye or the ear, and, therefore, if the child be totally deaf the teaching must necessarily be conducted through sight; but if there is a remnant of hearing the ear doubtless helps. The author divides the teaching of deaf children into four stages: (1) from babyhood to the time that he is brought under proper control in order to fit him for instruction and can be made to look at the teacher's mouth; (2) the development of articulation and production of sounds; (3) the connexion of certain movements of the lips with the objects and action which they represent (this embraces the teaching of language; at this stage it is desirable to make the child repeat the question put and then to give the answer); and (4) the ordinary school curriculum, including careful culture of the powers of observation. The child who is born deaf must be taught the use of language through sight; the adult who becomes deaf starts with the faculty of speech and knowledge of the use of words, but to be impressed by the sight of the words of the speaker as formed on the lips careful training is required. It is necessary that the teacher should have a complete knowledge of the art of lip-reading—an accomplishment to be acquired only by long study and experience. The adult pupil must be trained in seeing, in order that he may rapidly recognise and appreciate those positions and movements of the tongue and the lips which are required when a speaker gives forth the sounds which are represented by letters and which when strung together form the spoken word. It is, then, necessary that the student of lip-reading should study the lips of the render rather than the eyes. Efficiency in the art of lip-reading may be acquired by deaf adults and this mainly depends upon the way in which the facilities of observation and perception of movement have been cultivated, together with readiness of mental inference as to the meaning. Those persons who become deaf in middle life are apt to find themselves isolated. Some of the cases narrated by Miss Boultbee show that ready intercourse in social life may be re-established by acquiring the art of reading words and sentences from the speaker's face. The subject is an important one and the training suggested, if followed out with perseverance, is likely to ameliorate the condition of those who have lost their hearing. Besides the technicalities of training explained in this book there are many hints given which are likely to be appreciated by deaf persons.

LIBRARY TABLE.

Hare-lip and Cleft Palate. By R. W. MURRAY, F.R.C.S. Eng. London: J. and A. Churchill. 1902. Pp. 34. Price 3*s.*—Mr. Murray, who is surgeon to the David Lewis Northern Hospital, Liverpool, was formerly surgeon to the Liverpool Infirmary for Children, so that he has good opportunities of becoming acquainted with the subjects about which he writes in the book before us. He points out, and we think with justice, that there are few operations in surgery in which it is so difficult to secure a good result as that for hare-lip. His experience with regard to the matter consists of 168 cases of hare-lip, most of which included a cleft of the palate. Mr. Murray gives details of the methods employed by him which are very clearly set out and are further illustrated by diagrams. The book will be found to be thoroughly useful and practical.

Malarial Fever, its Causes, Prevention, and Treatment. By RONALD ROSS, C.B., F.R.S., &c. Published for the University Press of Liverpool by Longmans, Green, and Co., London. 1902. Pp. 68. Price 2*s.* 6*d.*—This book forms Memoir No. 1 of the Liverpool School of Tropical Medicine. Being written mainly for the use of travellers, soldiers, and residents in malarial countries it does not go into scientific detail but states in plain and simple language how malaria is conveyed and communicated, how it may best be avoided, and how, if acquired, it may be treated by a layman in the absence of medical aid. The treatise will be found most useful and everyone proceeding to a malarial country should take a copy with him.

The Prevention of Infection in Public Vehicles. By ALFRED GREENWOOD, M.D. Viet. London: The Sanitary Publishing Co., Limited. 1902. Pp 65. Price 1*s.* net.—This little book is practically an expansion of a paper read by Dr. Greenwood at the congress of the Royal Institute of Public Health which was held at Eastbourne in 1901. In our issue of Oct. 5th, 1901, p. 927, we endorsed Dr. Greenwood's suggestions as to the cleansing of public vehicles and we can but repeat our endorsement. A Minister of Public Health is a much-needed addition to Government.

Transactions of the Childhood Society for the Study of the Mental and Physical Conditions of Children. London: Childhood Society. 1902. Pp. 88. Price 2*s.* 6*d.*—This is the first volume of Transactions issued by the Childhood Society and it appropriately commences with a portrait and a notice of the work of Sir Douglas Galton, K.C.B., F.R.S., as founder and first chairman of the society. As a sanitarian and earnest scientific worker he was early impressed by the evidence accumulated during the examination of 100,000 children seen in schools, and their variations in development as found in different urban and rural districts. The society was established to study conditions of mental and physical development of normal children as well as of those whose conditions are abnormal or who are feebly-gifted mentally. Its existence has been more than justified by the useful work done; it fills a public need and has afforded guidance, and helped to educate public opinion with regard to many educational and philanthropic movements, while on several occasions evidence and recommendations have been given to Royal Commissions and other public bodies concerning special classes of children and their requirements. Abstracts of the following lectures which were delivered

during the past year are published: on Food Dietaries in Relation to School Life, by Dr. R. Hutchison; on Observations of Children after the Methods of Natural History, by Dr. Francis Warner; and on a Method of Teaching Children to Read, by Mr. M. Friedeberger, Ph.D. Two useful and interesting discussions were held; that on School Discipline from the Scientific, Inspector's, Teacher's, and Hygienic Points of View was introduced by Mr. A. W. Newton, M.A., and that on the Practical Bearings of the Society's Investigations on Social Questions by Mr. E. W. Brabrook, C.B. These showed how great is the need of widespread and exact knowledge of childhood. Two prizes were offered to teachers, for essays on Suggestions as to Giving Effect to the Education Code and on Children considered Suitable for Special Instruction; for these there was a keen competition. The volume gives much interesting information to those engaged in the care of children and their education.

Report on a Visit of Inspection to Colonies and Hospitals for Epileptics, the Feeble-minded, and the Insane in the United States of America. By J. MILSON RHODES, M.D. Brux., and EDWIN W. MARSHALL, C.A. London: P. S. King and Co. 1902. Pp. 51.—Dr. Rhodes and Mr. Marshall were sent as a committee of inquiry by the committee of the proposed colony for epileptics to be established at Warford, Cheshire. Their mission was to become acquainted with the best method of management of such an institution. Colonies and asylums were inspected in the following States: New York, Ohio, Pennsylvania, Maryland, and Massachusetts. The opinions of the committee of inquiry may be shortly summarised by the following passage: "The State of New York has fully realised the necessity for legislation in the interest of epileptics and has acted upon it. We are strongly of opinion that the sooner the authorities in England follow the example set by the State of New York the better it will be for the interests alike of the ratepayer and the unfortunate persons suffering from epilepsy."

Reports on Mosquitoes: North Shore Improvement Association. New York: Styles and Cash. 1902. Pp. 125 and a map.—The "north shore" mentioned in this report is the north shore of Long Island and it is a district much troubled by mosquitoes. Hence the North Shore Improvement Association, the objects of which are generally to promote "such measures as will tend to protect the territory as a desirable residential region," took the matter up. The examination of the matter was entrusted to an engineer, Mr. Henry Weeks, two entomologists (Professor Charles Davenport and Mr. F. E. Lutz), and Professor Shaler, an eminent authority on marine marshes, places which are favourite breeding-grounds for mosquitoes. The report is very interesting reading and, shortly summarised, it states that the breeding of mosquitoes can be prevented but that State legislation and the coöperation of the municipal authorities must supplement individual action.

A Hero of Donegal, Dr. William Smyth. By FREDERICK DOUGLAS HOW. London: Isbister and Co. 1902. Pp. 146. Price 2*s.* 6*d.* net.—William Smyth was one of that noble army of medical men who have laid down their lives in the service of their fellows. The story of how he and Dr. Brendan McCarthy, an inspector of the Irish Local Government Board, rowed across a strait in a crazy old boat and, no man aiding them, removed certain patients stricken with typhus fever to the hospital, is fresh in everyone's mind. The sequel of this act was that Mr. Smyth, who was run down from hard work and anxiety, contracted the fever himself and died. Mr. How tells the story of William Smyth's life and death in a simple unaffected fashion. It was a life such as few have the opportunity of leading and one, moreover, which perhaps still fewer would care to lead if they had the opportunity, but, like Abou Ben Adhem, William Smyth could be written down as one that loved his fellow-men, and who shall say that he has not reaped his reward?

Lights and Shadows in a Hospital. By ALICE TERTON. London: Methuen and Co. 1902. Pp. 229. Price 3*s.* 6*d.*—This is an easily and brightly written book. Mrs. Terton possesses two faculties which are of value to a writer—namely, observation and the grace of humour. We gather that her experiences were obtained some years ago, but although nursing has changed, patients are all much the same and so are the types of people who visit in hospitals. Of these two classes Mrs. Terton gives many little life-like sketches and we can recommend the book to anyone who wishes to know something of hospital life apart from medical details.

The Cult of Chiffon. By Mrs. ERIC PRITCHARD. London: Grant Richards. 1902. Price 5*s.* Pp. 212.—This is a book which the mere man feels a natural diffidence in reviewing. Only recently a contemporary, in giving an account of Henley, began to describe the dress of the ladies. After a line or two the writer broke off, saying that he remembered the fate of Actæon. It is some time since we read the Metamorphoses, but, so far as we remember, Actæon's fate was connected with a lack of clothing rather than with an abundance thereof. Medical men, however, have a licence forbidden to other men, so we may say that Mrs. Pritchard's remarks upon clothing are eminently satisfactory both from the point of beauty and hygiene. The average woman is apt to think that hygienic dress must be ugly, but a perusal of this book will show her that it is not so. Most sensible are the writer's remarks upon athletic dress and upon the care of the complexion. Miss Le Quesne's illustrations are charming, and great praise is due to the publisher for having included among the advertisements only one of a "beauty specialist."

IN our issue of Feb. 1st, p. 313, we reviewed at length the official account of the Surgical and Medical History of the Naval War between Japan and China during 1894–95. The copy of the book which we noticed was sent to us from Japan by the courtesy of Baron Saneyoshi, the Director-General of the Medical Department of the Imperial Japanese Navy. As the book is valuable and likely to be referred to in the future we think that it is well to announce that it can now be obtained from Messrs. Kegan Paul, Trench, Trübner, and Co., Limited, who have the sole market for England. The price is £1 11*s.* 6*d.*

New Inventions.

THE HELIX NEEDLE.

THE "Helix" is a spiral or corkscrew-shaped needle designed with the object of including the broad ligament in a continuous suture in the operation of hysterectomy. The worm of the helix is grooved in order to carry a suture; the point is blunt and the eye is kite-shaped. On threading the needle the suture is drawn into the narrow part of the eye and is thus prevented from slipping during the process of winding it on to its groove. This is done as follows:—After threading the needle the suture is gently held in its groove by the thumb of the left hand which, as the helix is rotated, follows each spiral and so holds the suture in its groove. The groove terminates in a vertical slot, into which the suture is finally placed. The instrument is now ready for use, having a strand of suture held taut and lying in its groove. In using the needle the point is introduced close to

the edge of the ligament and is firmly pushed through the tissues on to the forefinger of the left hand. In this manner the helix is made to travel along the ligament, care being taken that whenever the point is being pushed through the tissues the left forefinger ascertains that it has passed completely through, otherwise there would be danger of the point passing between and not through the layers. The handle of the needle is then depressed so as to elevate the point and to bring it into position as much as possible. With an aneurysm needle the free end of the suture can easily be released from the tissues. The next step is the unthreading of the needle, and in order to facilitate this the groove is made to terminate half an inch from the eye, so that a pointed needle can easily take hold of the suture and draw it out of the eye. This was a suggestion made by Mr. Down and adds greatly to the value of the instrument. The end of the suture thus freed is held in a pair of clip forceps, while the helix is slowly withdrawn by rotating it in the opposite direction, leaving the suture in its track. By pulling the free ends the suture is tightened and the tissues embraced by the suture are completely strangled. A portion of ligament is now included in a continuous suture, leaving two free ends yet to be dealt with. The distal free end is threaded to an aneurysm needle and carried by it through the tissues, so that when unthreaded there is a loop and free end on the surface of the ligament; these are made into a firm knot. The suture is again tightened by pulling on the remaining free end. All that remains to complete the operation is to deal with the proximal free end in the same manner, except that the pedicle needle is first carried round the edge of the ligament.

F. W. ROBINSON, M.D. Aberd., F.R.C.S. Eng.,
Honorary Surgeon, Huddersfield Infirmary.

A "SUTURE SICKLE."

THE removal of sutures in some situations, and especially in cavities, is sometimes a matter of difficulty. To simplify the procedure I have devised an instrument in shape something like a short aneurysm needle on a long handle. The concave edge is, however, sharp and the point is blunted like a small probe. It is an easy matter to pass the probe-point under a suture and to cut through with a slight jerk and only one hand is required. The sickle will be found a convenience for removing sutures from the uterine cervix, since the slender instrument in the speculum does not obscure the light and no forceps or scissors are required. I have also found it to simplify the removal of stitches in the perineum and on skin surfaces generally. Dr. C. Lawson Smith, resident medical officer at the Tottenham Hospital, has found it to answer well for general surgical cases. Messrs. Mayer and Meltzer, who make the instrument, have carried out my idea very satisfactorily.

ARTHUR E. GILES.
Upper Wimpole-street, W.

Looking Back.

FROM

THE LANCET, *SATURDAY, JULY 17*, 1824.

The pre-disposing cause of scrofula is congenital, or original fault of constitution. The exciting causes are whatever tend to produce, or rather increase that debility; such as the fever from diseases of a specific kind, as measles, scarlet-fever, and small-pox. Scrofulous affections occurring after small-pox, used to be much more frequent before the introduction of vaccination than since, and if there were no other advantage attending it than this, it ought to be regarded as a boon to society. The reasons, you must be acquainted with, how small-pox disposes to the excitement of scrofulous inflammation, without my entering into them at present.[1]

We consider it our duty to censure improper practices wherever we find them; and we are really astonished to see the admission of persons into the wards of this hospital[2] tolerated, who vend green gooseberries, unripe cherries and every other thing that a sick person should not have: tempting those to purchase who know no better, and affording the opportunity to others, who from a vitiated appetite, regardless of the consequences, need no persuasion to do so. It should be recollected also, that there are many children in the wards who are always anxious to lay out the little money their friends may furnish them with in the first trash that is shown them. The result with them almost invariably is, a considerable irritation of the lining membrane of the stomach and bowels, and sometimes even amounting to inflammation with a corresponding constitutional disturbance; and we must not suppose that even adults can escape with impunity. We have often observed great surprize manifested by the surgeon on finding the medicine which he had ordered produce just the opposite effect to that which was anticipated, which has induced him to substitute a less efficient remedy, under the supposition that the former one has disagreed with the patient. By which circumstance it happens that the patient is not only losing his time, but the surgeon is also losing confidence in the remedies he employs. We beg, therefore, to direct the attention of the proper authorities to this point, in order that it may be prevented for the future. We have before had occasion to notice this practice, and for a time it was discontinued. A repetition of the occurrence, has rendered a repetition of the caution necessary, and we hope that this gentle reminiscence will not be without its effect.

[1] Excerpt from a lecture delivered by Sir Astley Cooper in the Theatre of St. Thomas's Hospital on Monday evening, May 17th, 1824.
[2] Guy's.

LONDON SCHOOL OF MEDICINE FOR WOMEN.—On July 11th, at 40, Hunter-street, W.C., the prizes won by the students of the London School of Medicine for Women were distributed by Mrs. Percy Sladen. The St. Dunstan scholarship given by the governors of the Endowed Charities of St. Dunstan's-in-the-East, value £60 a year for three years, was awarded to Miss Somner; the Singleton scholarship, value £95, to Miss Coupland; and the Mackay prizes of £20 each to Miss Bolton and Miss Payne. In referring to the work of the school during the past year Mrs. Garrett Anderson, dean of the school, who presided, remarked that financially they were still in debt with regard to the new building but they hoped in a short time to succeed in sweeping the debt away. During the year they had reduced the debt by £1500, and there was now left to be cleared off about £6000. The most important event of the year was the appointment by the Royal Free Hospital Committee of women to two of the resident posts at the hospital. These posts had been filled with conspicuous success. With regard to the South African Hospital Commission it was interesting to know that two of their past students, Miss Waterston and the Hon. Ella Scarlett, formed part of the commission and did exceedingly good and valuable work.

THE LANCET.

LONDON: SATURDAY, JULY 19, 1902.

The Illness of the King.

SINCE we last wrote His Majesty the KING has continued to make uninterrupted progress towards recovery. So far, indeed, has he travelled along the road to health that on Tuesday, July 15th, he was able to leave London for Portsmouth whence he went on board his yacht. There is, indeed, but little to add to what we said last week concerning His Majesty. His condition is eminently satisfactory and the wound is filling up surely if slowly. As a matter of fact, the freedom from State care and social duties, together with the enforced rest in bed, has had a most beneficial effect and the KING is looking better than he has done for some years.

He has all along been a most exemplary patient and despite the hot weather has slept well, not merely by snatches but for continuous periods of eight or nine hours. Sir FREDERICK TREVES and Sir FRANCIS LAKING, together with two nurses, are with His Majesty on board the yacht. Although it might be supposed that recent State events would have exerted a retarding influence upon His Majesty's convalescence, yet we are enabled to state that neither the reception of Lord KITCHENER nor the personal interviews with Lord SALISBURY and Mr. BALFOUR, which were necessitated owing to the resignation by the former of the Premiership and the acceptance of that office by the latter, had any bad effects. Should the present fair weather continue it is only reasonable to hope that the fresh breezes of the Solent will accelerate the recovery so auspiciously begun in London.

An Indian Prince and the London Hospitals.

THE announcement that His Highness the Maharajah of JAIPUR has given a sum of £5000 to King EDWARD'S Hospital Fund for London illustrates in a striking manner the closeness with which East and West are linked together under the sway of the King-Emperor, while it affords an instance of the interest which the feats of surgical science excite among men of all ranks and nationalities when their attention is called to them by any notable example. That the King of England and Emperor of India should have at all times taken a keen interest in, and been active to help, the hospitals of his metropolis; that he should on the day appointed for his Coronation have lain in his palace owing his life to surgeons who acquired their skill and perfected their discoveries in those hospitals; and that every detail of his danger and of the steps taken to avert it should have been known and eagerly studied by his humblest subjects who openly expressed their trust in the skill of the surgeons employed and their confident expectation of the successful issue which has since been vouchsafed,—are facts well calculated to impress the mind of an intelligent and enlightened oriental magnate. He would well understand the part which is played by hospitals in securing the health of the community, while the Fund instituted by the KING himself would present itself as an obviously suitable subject for a gift complimentary to the monarch and acceptable in the eyes of his people. Moreover, the Maharajah of JAIPUR will have learnt, if he has inquired, that, conspicuous among English institutions, our hospitals are open to the poor of all nationalities and religions and that many of the natives of the great continent in which his dominions lie have from time to time found admission to them as patients. He will also be aware that to all parts of the British empire surgeons and physicians trained in British hospitals find their way.

In India the field which is slowly opening to medical science is, of course, enormous. Epidemic outbreaks of disease upon a scale of which in Europe we have no conception are there the incidents of ordinary seasons, officially chronicled but otherwise not calling for special attention. The recent epidemic of plague in India was conspicuous owing to the fierce nature of the outbreak and to the immunity which, with the exception of certain districts near the Himalaya mountains, the country had long enjoyed from *pestis bubonica*. The epidemic also served to call attention to the difficulty of supplying effective medical and sanitary aid in a country lying under the restrictions of the rules of caste, so that it had a political importance of grave significance. Cholera and small-pox can be studied in India at any time by those who are interested in their pathology and treatment but who might find it difficult to secure subjects for observation at home. It is not necessary to multiply instances such as these or to call attention to malarial fever and to recent efforts of science to cope with it, but it is easy to see that a native of India, ruler of a territory such as that in which the Maharajah of JAIPUR holds sway, would find during a visit to London much that would draw his attention to the science typified and localised in London hospitals. The care and attention bestowed upon sanitary science in London, including its minuter details, are conspicuous novelties in the eyes of princes coming from places far less distant from centres of European progress than Jaipur. To an Eastern prince it should be a fact of considerable interest that a town containing between 4,000,000 and 5,000,000 of inhabitants can exist in complete ignorance of epidemic disease as it is understood in India. The circumstances which beset the practice of sanitary science, medicine, and surgery in different degrees in different parts of India can only be completely understood by those who have been there, particularly by those who have practised medicine there. Our regular letters from different Indian stations have, we believe, served to open the eyes of the British practitioner to the hardships of the situation which his colleague in India often occupies; while to the public these hardships have been made more or less familiar through the works of RUDYARD KIPLING, particularly in his collaborated novel "The Naulakha." Many will therefore appreciate the degree to which London, its

health, and its hospitals may have impressed those oriental visitors whose sojourn among us has been lengthened by reason of the KING'S illness.

That illness has been the incident of the present year which has practically effaced all others; and no doubt the part played by surgical science in the saving of the life of King EDWARD and the impossibility of developing surgical science without hospitals are the points which most readily rivet the attention of rulers of countries in which surgical science is a foreign import of recent date not always regarded with the fullest confidence. With us the presence of hospitals is a fact of our daily lives often forgotten in health by those who, when sick or injured, hasten to avail themselves of the aid offered. To the Maharajah of JAIPUR, and also to the other distinguished visitors of high rank who came to London to assist at the Coronation, we would point out that the treatment pursued in the case of King EDWARD would have been pursued equally effectually had His Majesty been a poor man who owing to his want of means had had to be conveyed to one of our great hospitals. Such considerations as these may well affect the mind of a benevolent ruler desirous to assist a science the developments of which are likely in an increasing degree to improve the lives of his own subjects. By Londoners the munificence of the Maharajah of JAIPUR will be accepted as useful practical assistance to the institutions of which they are justly proud and as a compliment to the monarch whose Coronation as King of Great Britain and Emperor of India has been for a brief period delayed; while the full significance of a gift which emphasises the unity of India with the British Empire should be missed by none.

The Retirement of Lord Salisbury.

THE present has been somewhat hastily regarded as an age of young men, and it is true that here and there positions which our forefathers were wont to regard as the presumptive rights of seniority, if not almost of senility, are now taken by men in the prime of life. But it is equally true that in many walks of life promotion now comes more slowly than it did to our grandparents. But this much is certain—in no age has there been seen to greater advantage than the present the combination of youthful attributes with advanced years. We might almost call the preservation of youth a special attribute of modern times, and it is in this sense, rather than in the direct one of the advancement of men actually young, that we may justly term the present a young man's age. It is a time in which old people remain still young to a degree that obtained less frequently formerly. Her late Majesty Queen VICTORIA was a fine example of the way in which a trained, exercised, and well-balanced mind can deride the encroachment of advancing years. Mr. GLADSTONE was in this respect perhaps a still more eminent instance, and Lord SALISBURY provides a third example. An old man in years—for after the allotted span none may dispute the adjective old—Lord SALISBURY yet has an intellectual energy and keenness that many a younger man sighs for in vain. Forcible speech is a sign of youthful vigour, and some of those short impressive sentences which often characterised the late Premier's remarks rank him still as among the young intellects of the day.

But even those of the most vigorous mind are bound to feel the advance of years in some degree. And deeply though all must regret the necessity for Lord SALISBURY'S retirement, yet it can be realised that possibly he has given in retiring one more proof of that sound judgment which makes his very retirement the more to be lamented. Although he can bring to his political labours an energy equal to, and an experience far surpassing, that with which many younger men are endowed, yet Lord SALISBURY no doubt feels now that his day is past for that resistless activity, that easy adoption of a multitude of burdens, which may be looked for in a younger man while he holds the position of Prime Minister. Further, the case is not the same as it would be were Lord SALISBURY'S successor a stranger or an opponent. Whatever objections may have been insinuated against the family nature of some Ministerial appointments, at any rate at the present moment we must realise a great benefit in having in important positions men who will be able to avail themselves in necessity of Lord SALISBURY'S unrivalled experience. We need not doubt that his help will be forthcoming if wanted, privately it may be, but in none the less an invaluable manner. Assistance of this kind can be asked by, and given to, a near relative in a manner which would be awkward in the case of men less closely connected.

To the medical profession Lord SALISBURY'S character as a man of science and a student has always rendered him a person of particular respect and admiration. More than the ordinary individual the medical man can sympathise with, and admire, the attitude of mind of a man preëminently "of affairs" who seeks diversion from his worldly business in thinking out the truths and penetrating the mysteries of scientific problems. Many a busy practitioner in his digressions into botany, biology, or chemistry may have reflected sympathetically upon the recreations of the great Prime Minister, himself an ardent practical student of the science of chemistry. Moreover, it is pretty certain that with this scientific mental bias Lord SALISBURY is little likely to have sympathised with, as he certainly did not support, the indifference to medical questions which has on more than one occasion blotted the agenda of recent Parliamentary sittings. Mr. BALFOUR, we gladly and readily believe, is also disposed to regard with due seriousness any medical question that may be brought to the attention of the House of Commons. The influence of medical opinion upon that of the public has steadily increased in recent times together with the rise in the standard of medical education and with the enormous strides that medical and surgical knowledge has made. Medical men hold a position, and medical matters have assumed an importance, in the eyes of the nation at large that have never hitherto been reached. The interest in matters concerning our profession, and the confidence in its members which have been so manifestly displayed both by our late QUEEN and our present KING, have done much to strengthen the public conviction of the importance and wide influence of medical affairs. The time may still be far distant when this aspect of national affairs shall have the official

representation which many believe it should carry. We may have to wait a long time for a Governmental department or a Minister of Medicine, though such a development is far from being merely the wild dream of one prejudiced in favour of the medical profession. Nevertheless, even to-day no Government, no Prime Minister, can well afford to ignore the medical view of many questions of national importance, and we may congratulate ourselves that, if in losing Lord SALISBURY we miss a man by whom this aspect of things was never likely to be underrated, yet we have gained in Mr. BALFOUR a Prime Minister who is sure to take the philosophic, the wisdom-loving, view. Mr. BALFOUR is equally unlikely to under-estimate the importance of the medical aspect of many political considerations.

Tuberculosis in Asylums for the Insane.

THE question of tuberculosis in asylums for the insane has in the course of the last three years passed from the academical to the practical stage and may now be regarded as having reached a position of importance second only to the general problem of the prevention of mental disease. In an annotation which appeared in THE LANCET three years ago[1] attention was called to some of the more important points in relation to the causation and spread of phthisis in the insane and to the need for prevention. In November, 1899, at a general meeting of the Medico-Psychological Association held in London the question of the necessity for isolating the tuberculous insane was discussed and an important motion was passed unanimously to the effect that it should be referred to the Council of the Medico-Psychological Association to consider as to the appointment of a committee for the investigation and collection of evidence and for practical suggestions as to the isolation of tuberculous patients in asylums. At a meeting held in May, 1900, a Tuberculosis Committee was duly appointed to carry into effect the above resolution. This committee succeeded in collecting important facts and evidence as to the prevalence of phthisis in asylums. Returns on specially drawn-up schedules in the form of question and answer were received from 111 public asylums in Great Britain and Ireland, and interim reports based on these were from time to time drawn up after careful consideration and discussion by the committee. The complete report in its final form has just been published and is a document full of important facts and weighty suggestions.

The main conclusions reached by the committee are that phthisis is prevalent in our public asylums to an extent which calls for urgent preventive and remedial measures, and that a large proportion of patients contract phthisis after admission into the asylums. The susceptibility to acquire the disease seems to be higher in patients drawn from the large towns of England and Wales, with their factories and slums, than in those belonging to the rural population. Thus it is found that, whereas the average death-rate from phthisis in asylums with patients from a rural population was 16 per 1000, it was 30 per 1000 in asylums the inmates of which had been town dwellers, and 25 per 1000 for a mixed population. The committee points out that overcrowding and the consequent deficiency of air-space are the most important factors conducing to the high death-rate from phthisis in asylums. It is "satisfied that there is not sufficient cubic space per patient in the great majority of our large asylums," and adverts to the fact that where the inmates are made to spend as many hours as possible in the open air the death-rate from phthisis is appreciably lowered. In the interests of uninfected patients it is recommended that overcrowding must be checked before we can hope to lessen the death-rate from phthisis. More especially does this apply to the sleeping accommodation of our large asylums where large numbers of patients are congregated in huge dormitories. "We are of opinion," add the members of the committee, "that the predisposition to, and the actual infection of, phthisis is to a very large extent started in the sleeping-rooms of our overcrowded asylums." The committee, after fully discussing the matter in its report, recommends that an air-space of 1200 cubic feet with efficient ventilation should be the minimum provided for each sleeping patient, and a supplementary report upon the heating and ventilation of asylums is appended which deals with the subject in a very practical manner.

To prevent the spread of infection by the sputa of patients it is recommended that all the wards and sick-rooms should be provided with special vessels or spittoons containing disinfectants into which patients should be taught to expectorate, and that the bedding and bed-mattresses of every patient should be freely exposed to fresh air and sunlight daily. It is urged that regard should be had to the dietary of patients, so that sufficient variety of food may be secured and that a sufficiency of fats may be present in the food, a point the importance of which was demonstrated by Sir JAMES CRICHTON BROWNE during his directorship of the West Riding Asylum 30 years ago. The diagnosis of phthisis at an early stage is surrounded with especial difficulties in the insane. The plan of weighing every suspected case weekly to ascertain loss of body-weight, and the daily taking of temperature every four hours to detect elevations of temperature in the afternoon or evening, are important aids to diagnosis. Tubercle bacilli cannot, as a rule, be recognised in the sputa in incipient cases of phthisis, but it is pointed out that the tuberculin test is a valuable one if carefully and judiciously employed, and that in conjunction with the indications afforded by the weights and temperatures of patients a diagnosis may be made in many early cases. When signs of early phthisis are thus found it is imperative that isolation should be practised; this is strongly emphasised in the report. As a matter of fact, in a few asylums isolation has already been adopted, and honourable mention should be made in this connexion of the County Asylum at Lancaster, where Dr. D. McK. CASSIDY, the medical superintendent, has employed it for the past 12 years, with the result that since its adoption the tuberculous death-rate of the institution has decreased 50 per cent.

New asylums in course of erection, such as those for the counties of Warwick, Leicester, and Rutland, and for the

[1] THE LANCET, July 15th, 1899, p. 167, "The Insane Population and Phthisis."

district of Belfast, are being provided with isolation blocks and detached villas for the open-air treatment of phthisical patients. The ideal isolation hospital should stand on sandy or gravelly soil protected from north and east winds and should not be of too great a size. The committee wisely recommends that the accommodation of such a sanatorium should be for not less than 50 or more than 200 patients. Finally, it is urged that where permanent buildings for isolation and open-air treatment are not available in existing asylums temporary structures erected in suitable situations should be made use of, or special wards and airing courts should be set aside for such purposes. The committee concludes that it is only in some such way as the above that the hope of lessening the high death-rate from phthisis in asylums for the insane can be realised. If the principles of isolation and open-air treatment be recognised as imperative the details are easy of solution and the carrying-out of them may be safely left in the hands of the medical superintendents and the committees of management.

Annotations.

"Ne quid nimis."

INSANITY AND THE DEATH PENALTY.

WE have received some correspondence in addition to a letter which we published in our issue of June 28th[1] with regard to our leading article[2] dealing with the case of a man named Simmons, tried at Dorchester assizes for murder and acquitted on the ground of insanity. We have little to add to what we then wrote. The case was one, no doubt, upon the border line, and the defence which ultimately proved successful might have failed without any considerable surprise or comment being excited. The question of the mental condition of the prisoner when the criminal act charged was committed, if such a question be raised, is one of fact for the jury to decide. Some criticism appears to have been evoked by the refusal of the learned judge who tried Simmons to allow medical evidence of his sanity to be given as part of the case for the prosecution and in anticipation of the evidence about to be given for the defence. The judge was strictly right according to law in refusing to receive this evidence at this point in the trial, although some judges, we believe, have adopted a different course in similar circumstances. The accused person is assumed to be sane until the contrary has been shown, but if evidence of Simmons's sanity had been tendered later in rebuttal of the evidence of insanity given on behalf of the defence Mr. Justice Bucknill would have had no choice but to accept it. That such evidence, if there is any, should be given as rebutting evidence seems to be clear from the procedure adopted in trying McNaughton to whose case we referred in our previous article (see 4 State Trials, New Series, at p. 924), but no rebutting evidence, we believe, was offered at the trial of Simmons. The administration of the criminal law neither is nor ever can be perfect. We aim at the dispensing of even-handed justice to all classes and degrees of wealth and poverty, and as far as the integrity and zeal of our judges and the desires and ambitions of our advocates and officials are concerned we succeed. There is, however, a personal element in such matters which becomes more conspicuous the more important the trial may be and cannot at any time be got rid of altogether. In a murder case some judges feel more acutely than do others the responsibility for the life or the death of the accused person which undoubtedly rests upon them. Advocates are not of equal skill and experience. Prisoners are of different degrees, financially and socially as well as mentally. Some have relatives able to afford the best possible legal advice and to bring the witnesses necessary to establish a defence, even those that at first sight seem hardly essential to the case set up, and willing to exert themselves to the utmost to secure an acquittal or to establish a defence such as that of insanity. Other accused persons are poor, their relatives are tired of them or otherwise unwilling or unable to interfere, and although the Treasury will do anything reasonable to assist a prisoner in establishing his innocence it cannot be expected to help in raising a defence, such as that of unsoundness of mind, unless those upon whose advice it relies are clearly of opinion that there is good reason for such a defence being raised. We are therefore left to draw the conclusion, quite apart from the particular case which we have been considering, that some persons escape legal penalties which others of equal guilt or innocence but less favoured by circumstances undergo. It is not a satisfactory conclusion, but if we take into consideration the human element that enters into crime and criminal trials we can arrive at no other and can only try to ensure that the element of chance, where it exists, shall be reduced to the smallest possible proportions. With regard to a letter which we printed last week from the solicitor entrusted with the defence of Simmons in the case tried at Dorchester we have no doubt of the accuracy of what he writes. It does not, however, seem to us to affect in any way the conclusion to which we came in our leading article, which was that a murderer in whose case there has been an absence of self-control owing to mental infirmity may now escape the capital penalty which would have been meted out to him in days so recent as the middle of the last century. We abstained from saying that his escape was in any way a matter of certainty and we cited the case of Simmons as an instance in which the law as laid down in McNaughton's case would hardly have excused the prisoner, quoting with reference to his mental condition the evidence of Dr. W. B. Morton. Mr. Malim does not correct us and we conclude that Dr. Morton did not, in fact, go further than the expression of the view that at the time when Simmons committed the crime he had not a full appreciation of the nature and quality of the act. Absence of proof of motive where a murder has been committed in the circumstances described and the principal witness as to possible motive is consequently absent, should not form an important element among the considerations leading medical men to their conclusions as to the mental condition of the accused person.

[1] THE LANCET, June 28th, 1902, p. 1859.
[2] THE LANCET, June 21st, 1902, p. 1782.

THE SANITARY OATH IN BRITISH COLONIES.

FROM a West Indian newspaper we learn that Dr. R. C. Bennett, a medical man practising at Trinidad, recently objected to kissing the Book as a preliminary to giving evidence in a murder trial. The judge informed him that he would like to see the law amended but that he was there to administer it as it stood and that unless the objection to the oath was on religious grounds affirmation was not permissible. Subsequently, on Dr. Bennett stating that he did not believe in certain portions of the contents of the Testament which he was asked to touch with his lips, he was allowed to affirm. It will be remembered that in England there is no direct authority in any statute or rule of procedure

for the kissing of a Testament by witnesses. It is a practice of no great antiquity, the origin of which has, however, been forgotten, while the Oaths Act, 1888, permits any witness, who chooses to do so, to take the oath in the Scotch fashion with uplifted hand, without any question being asked him as to his religious belief. We commend this section of the Oaths Act to colonial legislative bodies. The reasons which cause us to consider the kissing of a book that has been similarly treated by thousands of other persons of all ranks and degrees of cleanliness to be a nasty and possibly dangerous proceeding apply with no less force in hot climates and in the midst of populations neither cleaner nor more careful in their regard for the public health than are our own countrymen. The section in question is as follows: "If any person to whom an oath is administered desires to swear with uplifted hand in the form and manner in which an oath is usually administered in Scotland he shall be permitted so to do, and the oath shall be administered to him in such form and manner without further question." The oath in Scotland is usually administered by the presiding judge, both judge and witness standing, the latter raising his right hand and repeating after the former: "I swear to Almighty God, as I shall answer to God at the great day of judgment, that I will speak the truth, the whole truth, and nothing but the truth." Few will be found to deny that this solemn formality, in addition to being more cleanly, is far more likely to bind the conscience of a witness of whatever nationality and colour than the perfunctory kissing of a Testament at the conclusion of a sentence repeated to, but not by, the person sworn.

THE DESTRUCTOR NUISANCE AT TORQUAY.

WE have more than once had to comment in these columns upon the nuisance that is caused to certain of the inhabitants of Torquay under adverse atmospheric conditions by the fumes from the chimney of the refuse destructor. We have received the following letter from Messrs. Goddard, Massey, and Warner, Limited, with reference to the comments which we have felt it our duty to make:—

The Editor,
THE LANCET,
1, Belford-street, Strand, W.C.

DEAR SIR,—Our attention has been called to comments you make upon the Torquay Refuse Destructor, which has a tendency of seriously interfering with our business. We have noticed these comments for a considerable time, but thought they would be abandoned, and if we see anything further we shall be reluctantly obliged to take such steps which are necessary to protect ourselves against such observations.

We are, yours truly,
GODDARD, MASSEY, AND WARNER, LIMITED (per H. M.).

Considering how very serious is the position taken up by the writer of the above letter we do not think that much care has been shown in the wording. Messrs. Goddard, Massey, and Warner complain, it will be seen, that the Torquay refuse destructor is interfering with their business. The destructor is situated in Devonshire and their business premises are in Nottingham, so that the inference to be drawn from their words is that the smell from the refuse destructor is worse than we have ever suggested. We must not, however, be betrayed into flippancy, for we feel that when Messrs. Goddard, Massey, and Warner took upon themselves to write to us in such terms they did a thing which must not be met with laughter. For nothing less than the suppression of what we believe to be the truth is demanded of us. Presuming, then, that it is our comments and not the fumes from the refuse destructor which are interfering with Messrs. Goddard, Massey, and Warner in their occupation as engineers we take this opportunity of informing the firm that what we have written has been written upon public grounds. We have not the slightest bias against them or the slightest desire to damage their business, but while the nuisance which is caused by the Torquay refuse destructor continues we shall consider it our duty to continue to call attention to it. And this we must do, despite all threatening, in discharge of our duty to the community. It is, by the way, the situation of the destructor with which we have found fault, a point which, although Messrs. Goddard, Massey, and Warner have "noticed these comments for a considerable time," appears to have escaped their attention. We are perfectly happy to publish in THE LANCET any criticism of our words that is demanded by accuracy. The subject has been dealt with in detail and can be contradicted in detail if we have been betrayed into error while writing in the interests of public health. But we cannot promise Messrs. Goddard, Massey, and Warner, as a reply to their ominous communication, that we will publish no more comments upon the Torquay refuse destructor.

A NEW TREATMENT OF HOOLIGANISM.

THE prevalence of ruffianism in the London streets is complimentary neither to our modern civilisation nor to our existing legal methods. Magistrates have but little power and do not always use such power as they have. Mr. Horace Smith, however, has introduced a new treatment which we earnestly hope will prove successful. On July 14th he had before him two young ruffians named Beake and Young. These with others of like kidney made themselves unpleasant in Chelsea on Sunday night and when arrested some of the gang shouted, "Off with your belts, lads, and put them through them." Young was wearing a heavy belt studded with brass badges and with heavy buckles. Mr. Horace Smith addressed them as follows:—

Had there been any evidence that the threat made use of was acted upon and that one of these formidable-looking belts had been taken off to be used I would have sent you both for trial for a riot and seen what a judge could do to stop this scandalous state of things in the London streets. My powers are not so large as I could wish, for what is the use of a 40s. fine to stop this sort of ruffianism? You would laugh at such a punishment. There is, however, another way of dealing with such cases. I am going to exercise it now and in future. You will each of you find two sureties in £25 each to be of good behaviour for six months and in default you will be kept in prison for that period.

Personally, we think that 50 lashes would be a much more binding security than £50 or six months' imprisonment. If Beake and Young had been taken straight from the dock and had been given a sound flogging in the presence of no one but a constable and the administering warder their zeal would soon cool. Preventive measures for the young and budding hooligan should certainly be undertaken, but the full-grown plant must be reasoned with by appealing to his sense of pain and that in circumstances in which there is no gallery to play to.

PUBLIC HEALTH OF TRINIDAD AND TOBAGO.

THE official report of the surgeon-general of the colony shows that during the year ended March 31st, 1902, there was no epidemic prevalence of disease in Trinidad and Tobago, but there was more than the usual amount of sickness, especially in Port of Spain, the capital of Trinidad, the cases being principally acute diarrhœal disorders, measles, whooping-cough, chicken-pox, and typhoid fever. Malarial fever occurred as usual in all parts of the colony but was generally of the benign type; only one case of blackwater fever presented itself. During the period in question 6097 children were successfully vaccinated; the proportion of vaccinations to births was about 70 per cent.; the lymph seems to have been sent from England and complaint is made of its inferior quality for the greater part of the year. The quarantine authority placed 57 vessels under quarantine observation, the aggregate of crews and passengers being 3883 and 2001 respectively. The present surgeon-general of the colony is Dr. James A. De Wolf who was in 1901 appointed to the vacancy created by the retirement of Sir Francis Lovell. The appendices to his report

give a variety of statistical and other information relative to the public medical institutions of the colony—namely, the Colonial Hospital at Port of Spain, the San Fernando Hospital, eight district hospitals, three hospitals for yaws, the lunatic asylum, the leper asylum, and the house of refuge. The total admissions to these various institutions during the year ended March 31st, 1902, was 12,392, and there were 1681 deaths. At the hospital for yaws 88 cases remained under treatment on March 31st, 1901, and 736 cases were admitted during the ensuing 12 months—namely, 500 at St Augustin, 140 at St. Clair, and 96 at Arima. There were, therefore, 824 cases under treatment, of which Dr. De Wolf says that 526 were cured, 13 died from various intercurrent diseases, and 285 remained under treatment on March 31st, 1902. He is of opinion that the segregation and treatment of the disease in hospital have led to satisfactory results and that the heavy expense incurred in establishing and maintaining this system has been justified. With respect to treatment Dr. J. R. Dickson of the St. Clair Hospital mentions that it consists chiefly of the internal administration of iodides, principally iodides of iron or arsenic and iron, together with daily baths in which soft soap is liberally used, and the local application of antiseptics, such as carbolic acid lotion, zinc sulphate or copper sulphate, and an ointment or oil of iodoform, carbolic acid, or mercury. When the tubercles were large and exuberant the most prominent were from time to time excised. Dr. F. A. de Verteuil of the Arima Hospital has found treatment by thyroid extract to be of the utmost value, especially when the eruption was tubercular, and a combination of salicylic acid and collodion proved itself a good local application to the hard crust-covered tubercles. Both these gentlemen agree that daily baths and a liberal diet are of the first importance in the treatment of yaws. The maximum and minimum shade temperatures during the year were respectively 94·0° F. in April, 1901, and 61·0° in December, 1901, and also in January, 1902. The total rainfall for 12 months was 55·78 inches. The census of 1901 showed that the population of the colony was 273,899.

THE HINDRANCE TO PROGRESS CAUSED BY THE EXPENSES OF TRANSPORT.

IT is well-nigh an axiom that England discovers but that other nations profit by the discovery. In the race for industrial supremacy it is evident that the English nation must soon lag behind if it does not bestir itself. Its opportunities, which are not less favourable than those possessed by other countries, are not seized owing to a failure to realise their immense bearing on industrial success. One great aim of this country should be to acquire a means of transport which would cheapen the carriage of goods from one part of the country to another. It is well known that it is cheaper to import many goods from abroad into England, including articles of food, than to send them to London from the country districts near at hand. Brittany butter is a good deal less expensive than English butter on account of the cheapness with which it can be transported. English railway rates have done more than anything else to cripple the resources of the land, and yet transport abroad is sufficiently cheap to make growing to be profitable both for consumption in the country and for consumption out of the country as well. Surely this is an anomalous and reproachable state of things. Still, we do not believe that the anomaly and the reproach cannot be removed. England is a long way ahead of many other countries in regard to canal ways. We possess, indeed, over 4000 miles of artificial waterways. But the method of working them is archaic and utterly out of keeping with the clear indications of modern progress. The canal waterways of England, it is true, are not idle, but they might as well be so considering the extremely unscientific way in which they are worked. It is hardly possible to estimate the extent of the influence upon our industrial position which the improved working of our waterways would have if transport could in this way be made reasonably rapid and cheap. And there is no reason why such a fillip to this method of transport should not be given. If railway companies pretend that they cannot cheapen rates some other method of transport must be found. In Germany and Holland transit both by railway and water is infinitely cheaper than it is in England. Why is it so? Surely, we might have a useful commission of inquiry upon this subject, which, however, we may anticipate would find as an answer, apathy, mere apathy. We are glad to see that this and cognate subjects have recently been discussed at the Liverpool meeting of the Society of Chemical Industry, the discussion being opened by a paper by the President, Mr. Livinstein, who chose for its title, "Education and Legislation: their Influence on Trade and Industry."

THE NATIONAL SOCIETY FOR THE PREVENTION OF CRUELTY TO CHILDREN.

THE latest annual report of the National Society for the Prevention of Cruelty to Children, which is published in this month's issue of the society's journal, contains a highly satisfactory record of progress. The total receipts for the year which has just closed amount to £73,875, and this sum does not include the funds collected by the Scottish branches which are under a separate administration. In England, Wales, Scotland, and Ireland there are now 934 centres of work. New and commodious offices have been opened in Leicester-square, London, a large part of the cost incurred in this undertaking being met by colossal contributions from two friends of the society, Mr. Astor and Mr. Woolcott Thompson respectively. These statements are in themselves remarkable. Their effect is very greatly enhanced when we compare the present position of the society with that which it occupied at the date of its first report 13 years ago. Omitting Scotland for the reason above given we find that there were then 52 working centres and the income reached a total of £8871. The number of cases under supervision was then 3947. Last year (over an immensely extended area) it was 32,787. When we remember that the object of the society is primarily that of reformation, that it is teaching reckless people to live reasonably and humanely with their own kind, and that its efforts towards this object are coming to be understood and approved even by the very people who might be expected to oppose them, we desire no further proof that it is working on the right lines and deserves all the prosperity which may come to it.

ACROMEGALY AND MYXŒDEMA IN THE MIDDLE AGES.

ACROMEGALY and myxœdema are said to have been first described, the one by Marie and the other by Gull, in 1886 and 1873 respectively. But the type of figure and feature produced by these two diseases must have been recognised as something markedly peculiar for many centuries. To go back no later than the eighteenth century every medical man must have been struck by the acromegalic type of many of Rowlandson's characters, a fact which we have remarked upon in THE LANCET. But we have recently come across a far earlier example which is so forcible in many ways that we think it worthy of note in our columns. There is at present on view in a little gallery in Ryder-street, St. James's, S.W., belonging to Messrs. Carfax and Co., an extraordinarily fine painting by Piero di Cosimo. Many of our readers may know the "Death of Procris" by this master in the National

Gallery, but the picture in the Carfax Gallery shows him in a very different light. The subject is the conflict between the Centaurs and the Lapithæ which took place at the wedding feast of Peirithous and Hippodame—a description of which is given by Ovid in the "Metamorphoses." According to the poet the bride was remarkable for her beauty—a quality not apparent in her picture. But it is to the other Lapithæ represented in the picture that we wish to draw attention. Almost all of them, together with some of the Centaurs, have the typical facies of acromegaly, while the Lapith woman who is being carried off by a Centaur—she is standing on his back and is supported by a scarf round her neck—has in addition the pendulous belly of myxœdema. Considering the date of the painting, *circa* 1482, the anatomical drawing is wonderful. More especially is this marked in the strenuous figures of Theseus and Peirithous and in the masterly way in which the foreshortening of the various fallen bodies is managed. It is true that a dead Lapith lying near the centre and upper part of the panel is singularly badly drawn, but the representation of one of the fallen Centaurs in the foreground is surprisingly learned. To return, however, to medicine, to us the internal evidence seems convincing that Piero di Cosimo was familiar with the facies of acromegaly and must have been struck with its fitness to express a certain brutishness of type. It is more likely that he had seen the type than that he should have accurately evolved it out of his inner consciousness.

THE DISTRIBUTION OF PLAGUE.

THE weekly return of the Director-General of the Sanitary Department of Egypt shows that for the week ending July 6th there were 9 new cases admitted, 2 of which occurred in Europeans. The deaths numbered 7, the recoveries 4, and 8 cases remained under treatment. With respect to sanitary measures 13,378 rooms were disinfected and 1581 were limewashed; 99 sacks of effects were disinfected and 1141 sacks of rubbish were burned. The number of rats killed by burning was 1009. One of the fatal cases of plague occurred in a Greek at Port Said, where no cases have occurred since Sept. 26th, 1901. The Director-General, however, says that "all the necessary measures having been immediately taken I am entitled to hope that the disease will not assume a large proportion." A telegram from the officer administering the Government of Hong-Kong (received at the Colonial Office on July 15th) states that for the week ending July 12th there were 28 cases of plague and 27 deaths from the disease.

CLAYTON GAS.

SOME remarkable experiments have demonstrated the superiority of Clayton gas to pure sulphurous or carbonic acid gas for the purpose of destroying rats as a prophylactic measure against plague. The practical results obtained under the supervision of Dr. Edward Walford at Cardiff are described in our "Public Health and Poor-law" columns this week (p. 178). The gas is essentially sulphur dioxide, but there occurs in it by the particular method by which it is obtained what may be called an impurity, without which, however, the effect upon rats would not be so disastrous. This impurity is sulphur trioxide, the presence of which is manifest from the fuming properties of the gas. Clayton gas is produced by the combustion of sulphur in a current of air during which the temperature rises sufficiently high to lead to the formation of some amount of sulphur trioxide. The apparatus is handy and convenient and free from any element of danger and has been tried on a very large scale and in every instance the effects on rats have been most destructive and vastly superior to those obtained with pure sulphur dioxide. The gas is used mixed with air in the proportion of 10 to 15 per cent. It is stated that less than 5 per cent. of the Clayton gas will destroy rats and other vermin, while at least 15 per cent. of pure sulphur dioxide is required for the destruction of vermin life. Odd as it may appear, Clayton gas has no appreciable action on coloured materials, foodstuffs, paints, or dry metals except in a moist atmosphere. The fire-extinguishing properties of Clayton gas are also remarkable, a mixture containing 8 per cent. rapidly extinguishing burning materials. For the purpose of disinfecting ship holds or for destroying vermin the fact that this gas puts out fire gives it a double advantage. The apparatus is thus available for either disinfecting purposes or for the extinction of fire as the case may be. The method was devised by Mr. T. A. Clayton of the Clayton Fire Extinguishing and Ventilating Company, of 22, Craven-street, London, W.C.

FIVE INSTANCES OF GENERAL PARALYSIS IN BOTH HUSBAND AND WIFE.

IN the *Archives de Neurologie* for June last Dr. P. Keraval, medical superintendent, and Dr. G. Raviart, assistant physician, of the asylum at Armentières, record five instances of general paralysis in married couples, husband and wife being equally affected with the disease. Syphilis was not present in every case, probably because it is not, say Dr. Keraval and Dr. Raviart, the sole or exclusive cause of general paralysis. The following is a brief epitome of the five cases. The first case was that of a man, aged 41 years, without hereditary predisposition to insanity. He contracted syphilis while serving with his regiment. He was married but had no children. The symptoms of general paralysis began 15 years after infection. His wife was a healthy woman of temperate habits. The symptoms of general paralysis appeared in her case shortly after the death of her husband in 1896, but for some time prior to that she had symptoms indicative of tabes. The second case was that of a man, aged 50 years, free from syphilis or from any hereditary taint of insanity. His married life was unhappy as his wife deceived him and finally left him to abandon herself to a loose life. He grew depressed thereafter and within 15 years developed general paralysis. The wife who abandoned him to lead a life of prostitution became a general paralytic, but it could not be positively ascertained whether she had become infected with syphilis. Her habits were, however, for years markedly intemperate before general paralysis appeared. The third case was that of a man, aged 48 years, a waiter by occupation. There was a hereditary tendency to gross brain disease. Shortly after marriage he developed melancholia with suicidal ideas. He then passed through a state of mental enfeeblement and lapsed rapidly afterwards into general paralysis. His wife, aged 49 years, was addicted to alcohol but had no hereditary taint of insanity. She developed melancholia and passed through a stage of depressive delusions into general paralysis. The disease was rapidly fatal in this case in both husband and wife. In the next case the man was aged 38 years and presented no traces of syphilis. He had an accident to the head in March, 1889, which made him ill and caused him to suffer from terrifying hallucinations of wild beasts and the like. He got rapidly worse and he was placed in an asylum. He subsequently developed symptoms of general paralysis and the disease ended fatally in March, 1897. His wife seemed a woman of good health, free from alcoholism and syphilis. After her husband was placed in the asylum she lost a daughter and suffered much from grief and destitution. In July, 1894, she developed delusions of grandeur and other symptoms of general paralysis and died four years later from the disease. The fifth and last case was that of a man, age

47 years, who presented no evidence of syphilis and was of temperate habits. A twin brother developed general paralysis at the age of 39 years consequent upon worries and grief. The patient was married and was the father of five children. He developed symptoms of general paralysis at about the age of 44 years and died after having been in an asylum for two years and six months. His wife was a woman of temperate habits and free from hereditary predisposition to insanity. In her case the only cause that could be found to account for her illness was grief and anxiety at her husband's illness and at his being placed in an asylum. Two years after her husband's sequestration she developed distinct signs of general paralysis. The disease ran a very rapid course and proved speedily fatal. The observations made and recorded by Dr. Keraval and Dr. Raviart are by no means exhaustive and complete, but lend support to the view that, apart from syphilis, other factors, such as alcoholism, grief and destitution, head injuries, and an obscure bodily predisposition to the disease not as yet well understood, lie at the roots of the causation of general paralysis of the insane.

THE APPOINTMENT OF MEDICAL OFFICERS TO WORKHOUSES AND OTHER INSTITUTIONS.

THE Rev. George A. Seymour has sent us a letter with the above heading in which he makes some judicious observations on the unreasonableness of the system according to which the salaries of Poor-law medical officers may be made inclusive of the cost of the medicines and surgical appliances required by the patients. The letter is too long for publication in full, but its general tenor will be apparent from the following extracts.

"I would observe upon the subject of the appointment of medical officers to workhouses and various benevolent institutions that it has become a very frequent practice to unite under one head of payment the stipends of such officers with the supplies of medicines and perhaps also of some appliances required by sick persons, this method being adopted under the plea of avoiding trouble and of saving expense. But with no certain knowledge beforehand of the amount or nature of the sicknesses to be dealt with in any given time, how can justice be done either to the medical officer or to his patients under these circumstances, and how can the use of the expensive medicines required in some cases be expected? Does any intelligent person having cattle in his fields, or any trainer having valuable horses in his stables, enter into terms with the veterinary surgeon to deal with cattle or horses after this manner? No sensible person would venture on such a scheme. These arrangements are made under the plea of saving expense, an intention justifiable enough when the case is equitable and right, but in economics it is a grave question whether wrong and unjust methods are in the long run really more profitable, that is, more saving in a money point of view, than just ones."

A CASE OF AORTIC ANEURYSM SUCCESSFULLY TREATED BY THREE HYPODERMIC INJECTIONS OF GELATINISED SERUM.

IN the *Archives de Médecine et de Pharmacie Militaires* for June Surgeon-Major Dusolier reports a case of aneurysm of the abdominal aorta which was successfully treated by the subcutaneous injection of gelatinised serum according to the method recommended by Dr. Lancereaux. On the morning of Sept. 7th 150 grammes of artificial serum containing 1·5 grammes of gelatin were injected into the left flank. There was no local reaction but in the afternoon the patient's temperature rose to 38° C. and his pulse increased from 85 to 95. There was also slight retention of urine. The following morning these symptoms had gone and two days after the injection the patient, who till then had been greatly depressed, declared that he felt very much better. The severe pain was considerably diminished and he could now remain in a sitting posture as long as he liked without being "shaken by electrical discharges in his legs." There was, however, no improvement as regards the tumour. Its volume remained the same and the throbbing vibration and systolic murmur were unaltered. On the 14th 200 grammes of artificial serum containing three grammes of gelatin were injected into the right thigh. Towards midday the patient experienced a violent rigor; his temperature in the space of two hours rose to 39° C. and his pulse to 98. On the next morning not only was the general condition improved but there was also distinct amelioration in the local signs. Two days after the second injection the tumour had palpably shrunk, its expansive force was much less, and the space over which the murmur was audible had considerably diminished. On the 23rd 200 grammes of serum containing two grammes of gelatin were injected into the right flank. That evening the temperature reached 40° C., while the following morning it was still 38° C. The patient's pains had entirely vanished; he no longer suffered from lumbago, headache, or vertigo. The troublesome feeling of anal protrusion of which he used to complain had also disappeared as well as the sensation of pricking and tingling in his lower extremities. On Oct. 4th he was discharged practically well. In conclusion Surgeon-Major Dusolier draws attention to the febrile reaction which increased in severity after each injection. These operations were performed with strict antiseptic precautions and no local complication of any kind supervened. He regards the rising temperature as the index of the curative action of the gelatin, and is also of opinion that the aneurysm was sacciform, with a very narrow neck, thus lending itself to an exceptionally rapid cure.

HIGH FREQUENCY CURRENTS IN THE TREATMENT OF MALIGNANT DISEASE.

IN the July number of the *West London Medical Journal* Dr. James Allan publishes an account of four cases of malignant disease in which great relief was obtained by the application of electric currents of high frequency and potential. The first patient was a female, aged 48 years, who was operated upon in July, 1899, for sarcoma of the antrum invading the nasal cavity. There was a recurrence in August, 1900, and some further growth was removed under cocaine. In July, 1901, there was a fresh recurrence with much dragging pain which prevented her from sleeping and she was advised that a further very serious operation was necessary. The growth was easily seen in the nasal passages. Dr. Allan applied the current by means of a small condensor electrode passed into the nostril for 15 minutes each sitting, using a primary energy of five ampères. After the second application the pain began to subside and the growth to become less. In all the patient had 15 sittings, at the end of which the visible growth had disappeared and the pain was entirely gone; she returned to her home in the country and has since had no recurrence. The growth was a spindle-celled sarcoma. The second patient was a woman, aged 37 years, whose breast was removed for carcinoma in November, 1901, the axilla being cleared out very freely and a very bad prognosis being given. Three weeks after the operation Dr. Allan commenced the high frequency treatment locally by the unipolar method, using a primary energy of five ampères. The patient's weight was then nine stones and nine pounds. Her appetite speedily returned and she felt much better. At the present time, four months after the operation, she is in excellent health, her weight is 10 stones and one pound, and there is no sign of recurrence. She has had 30 applications of 10 minutes each sitting. The third patient was a woman, aged 63 years, whose left breast was excised for scirrhus in August, 1901. Two months after the operation signs of recurrence began. In the first week of November Dr. Allan

commenced the unipolar treatment locally for 15 minutes each sitting, using a primary energy of three and a half ampères. After the fourth application the pain began to subside and the indurated parts to soften. The patient's general condition improved rapidly, sleep returned, and her appetite became good. After 28 applications all trace of the recurrence had disappeared. The fourth patient was a woman suffering from epithelioma of the cervix too far advanced for operation. The case being a desperate one Dr. Allan pushed the treatment much further than he had ever done before, and gave from 40 to 60 minutes' treatment daily, using a primary energy of five and a half ampères. A unipolar or condensor electrode was passed into the vagina and made to impinge against the growth. The treatment was continued daily up to Jan. 2nd, 1902, when the patient became very ill and it was not resumed till Jan. 26th. At present the growth seems to be entirely arrested and the patient feels very comfortable. Dr. Allan uses an induction coil giving a 12-inch spark, with a mercury jet interrupter, working from the house main at a pressure of 210 volts with a D'Arsonval-Oudin high-frequency apparatus.

COLOUR AND COLOURING MATTERS.

THE popular conception of the nature of colour is somewhat curious. Perkin's discovery of the preparation of aniline dyes from coal tar (the first one, mauveine, was obtained in this way in 1856) is very generally attributed to his observation of the play of colours seen on the surface of a river into which tarry matters had been discharged. Gasworks at one time were a common source of such a discharge. Colour, of course, is not an entity—it is an effect, like the rainbow, or shadow, or light itself. The colour effects seen when any substance of an oily nature floats on water are due to the formation of a thin film following the natural spreading action of the oil on the water. A thin soap film gives colours in the same way. The fine play of colour is produced by the mutual interference of the light reflected from the two surfaces of the thin film. White light by undergoing a series of reflections and refractions, as through a prism, is split up into its colour components in accordance with the degree of refrangibility of each elemental colour. The colours thus seen are not due to any specific substance which, like a green leaf, is endowed with the power of the selective absorption of light. The film is an analyser of white light, laying bare all its primary colours; a leaf is green or a flower red because of selective absorption. The particular colouring matters known as dyes are, however, not only eminently endowed with the power of selective absorption in regard to light—a power which causes them to appear coloured—but their particles or atoms possess a strong faculty for wandering into fibres and fabrics, and moreover, of becoming dissolved therein. This wandering power and solubility in solid materials, possessed to such a high degree by dyes, distinguish them sharply from ordinary coloured substances. In the former case the particles travel into fibre and are actually soluble in it; in the latter case, although penetration proceeds the actual solution of the colour in the material is not effected. In short, a dyed fabric is nothing more than a solid solution of the dye stuff in the substance of a fibre. Clearly Perkin's discovery had nothing to do with the pretty light phenomena of films. The number of artificial colouring matters prepared since that discovery, now nearly 50 years ago, has been enormous. It is estimated that at the present day over 3,000,000 different individual dye-stuffs are easily accessible to our industries, while at least 25,000 form the subject of patent specifications. The number of colouring matters furnished by natural agencies is comparatively small and those that do exist threaten soon to be ignored in favour of coal-tar derivatives. Perkin's great discovery has led to a complete revolution of the colour output of the world and has placed at our disposal an infinite series of colours of every variety and shade. Moreover, it is interesting to remember that the aniline dyes have proved of great service in determining the nature of disease. The germ-theory of disease could not have developed so rapidly and on such definite lines as it has done had not aniline stains been discovered which were soon found to possess the power of marking and individualising the specific organism by dissolving in it and thus enabling in several instances an exact bacteriological diagnosis to be made.

THE NEW MEDICAL STAFF COLLEGE.

AS our readers are aware, the establishment of an army medical school or institution in this metropolis was a point on which we laid much stress in the series of articles which appeared in THE LANCET in connexion with the proposed army medical reorganisation, and it was one of the measures recommended by the War Office committee over which the War Minister presided. This was in due time followed by the announcement that the next session of the Army Medical School will be held in London. But we have not yet had any official announcement as to what is about to be done to give effect to it or as to what is to become of the present school at Netley, with its teaching equipment and its professorial staff. The establishment of a medical staff college in London, if properly organised and carried out, will, for the reasons we have already given, be a great step in advance and will bring about important and progressive changes in the direction of developing the position and efficiency of the army medical service as a whole, but it will, we fear, be a somewhat costly undertaking. In view of the competitive examination held this month, for which, we are glad to hear, the number of candidates is large, there is not too much time at the disposal of the War Office authorities to make their arrangements.

CALEDONIAN MEDICAL SOCIETY.

WE have already mentioned[1] the awards of the Gunning prizes of the Caledonian Medical Society. The first prize of £20 was gained by Dr. H. Cameron Gillies of London for an annotated reproduction and translation of a Gaelic medical MS. in the British Museum, while the second prize of £10 was gained by Mrs. K. Whyte Grant of New Zealand for an essay on the Influence of Scenery and Climate on the Music and Poetry of the Highlands. Mrs. Grant's essay is published in the July number of the *Caledonian Medical Journal*, of which it occupies rather over 40 pages. Incidentally referring to the Ossianic poems she maintains that they are authentic productions of antiquity and quotes similarities between passages in them and in the East Indian Mahabharata and Ramayana. In conclusion she gives a long account of the myth of Cailleach Bheur which is interwoven with the folklore of several nations. Mr. Donald Mackinnon, professor of Celtic literature in the University of Edinburgh, contributes a genealogy of the medical family of the Macbeths or Beatons of Islay and Mull, together with a bibliographical account and two photographs of a Gaelic medical MS. in the University of Edinburgh. Under the heading of Medical Notes from Berlin Dr. Donald Bremner Waters supplies some miscellaneous information which may be found useful by persons visiting Berlin with a view to medical study. In the advertising pages of the *Journal* it is announced that by the kindness of Dr. Stewart of Bacup the society is enabled to offer a prize of £10 for an essay on Old Highland Therapy. The essays are to be written in English, are not to exceed 20,000 words, and are to be sent

[1] THE LANCET, Feb. 15th (p. 465) and June 7th (p. 1618), 1902.

by May 1st, 1903, to Dr. S. Rutherford Macphail, Rowditch, Derby. The twenty-second annual meeting of the society will be held during the present summer—namely, on August 15th—at Inverness.

THE PREVALENCE OF SMALL-POX.

THE following figures show the number of patients admitted to the various hospitals of the Metropolitan Asylums Board for the dates mentioned: on Saturday, July 12th, there were 3 fresh cases; on Sunday, the 13th, there were 2 fresh cases; on Monday, the 14th, there were 11 fresh cases; on Tuesday, the 15th, there were 4 fresh cases; and on Wednesday, the 16th, there were 11 fresh cases.

PROPOSED JOURNAL FOR THE ARMY MEDICAL SERVICES.

THE Director-General of the Army Medical Service has issued a circular regarding the proposed establishment of a journal for the Army Medical Services. Sir William Taylor believes that a journal devoted to matters of professional and scientific interest would confer many advantages and be generally welcomed by army medical officers. Such publications are issued by the medical services of Continental Powers. It is hoped that a journal conducted upon such lines as are set forth in the circular in question would not only enable medical officers to keep in touch with what is going on in the British service but with the advances and changes that are taking place in other armies. The proposed journal would to a great extent take the place of the present appendices of the Army Medical Department Reports, but would contain, in addition to original articles of a medical, surgical, and scientific nature bearing upon army hygiene, reprints and translations from military, medical, and other journals. In these and other respects such a publication would serve to draw out much information now latent and to focus a large amount and variety of useful and interesting knowledge which is now comparatively lost or rendered unavailable from being dispersed in so many different directions. The Director-General is naturally desirous of eliciting the views of his department on the subject and of ascertaining the amount of support which the proposal would be likely to meet with.

ADMINISTRATION OF HIGHLY VOLATILE ANÆSTHETICS.

WE noted in a recent issue an apparatus used in France for the exhibition of the more volatile anæsthetics, such as chloride of ethyl. It is stated that the apparatus in question "hermetically seals the mouth and nose." That chloride of ethyl and some of its congeners and mixtures must be given by some apparatus which enables the administrator to minimise the access of air is obvious owing to their great volatility, but we think that it is open to grave question whether the danger of their use is not accentuated when the patient is permitted to breathe only such air as is contained in his lungs at the time of the administration. It is patent that the requirements of the normal man are, as regards oxygen, more than met by ordinary respiration and that even a temporary exclusion of atmospheric air may safely be permitted. The danger lies in the fact that not only are many people unable to forego their supply of oxygen for any period without peril, but that the struggling which not uncommonly is associated with complete exclusion of air is in itself liable to produce syncope. The tide of fashion, which exists in anæsthetics as in other sublunary matters, is at present setting in favour of chloride of ethyl under various disguises and there is only too great a liability to forget that such volatile bodies are depressants and that their capacity for danger culminates when the mouth and nose are "hermetically sealed."

MEDICAL EXCURSIONS TO GERMAN WATERING-PLACES AND HEALTH RESORTS.

WE understand that the committee which organises medical excursions to German watering-places and health resorts has arranged an extensive and varied programme. The number of the party is limited to 400, and it is stated that a great many names have been already received, so that early application on the part of those intending to join the excursion is advisable. Every information may be obtained from the secretaries, Dr. W. H. Gilbert, Baden-Baden, and Dr. P. Meissner, 81 Kurfürstenstrasse, Berlin. The amount of the subscription is 150 marks (£7 10s.).

THE NAVAL MEDICAL SERVICE.

THE communication from the Warden of the London Hospital Medical College which appeared under the above heading in the *Times* of Monday last, July 14th, is worth the attention of our readers. The letter has already been published in our columns[1] and commented upon, but our remarks will bear repetition. The Warden very wisely and pertinently recommends that a naval surgeon should be allowed to hold a house surgeoncy for six months at his hospital after, and not before, entering the naval medical service whilst counting his time and pay during the time he holds that post. By so doing the loss of time and seniority entailed by his taking up the appointment of house surgeon to a civil hospital before entering the naval service would be overcome. This, as matters stand at present, deters medical candidates for the navy from seeking such posts. We have already expressed our concurrence in this view and we may add that we likewise concur in the other proposals contained in the Warden's letter. If his suggestions were adopted we think that they would prove valuable and a considerable number of very desirable candidates who are now lost to the service would be secured.

THE CEREBRO-SPINAL FLUID.

THE nature of the cerebro-spinal fluid has recently been the subject of investigation by Professor E. Cavazzani of the University of Ferrara, who gives his results in the first fasciculus for 1902 of the "Archives Italiennes de Biologie." First, in regard to its alkalinity, which he determined by "lacmoid," he finds that in the dog the mean is 0·093 per cent. of NaOH and in the ox 0·104 per cent., the fluid being obtained from animals killed by bleeding. In other cases the fluid was obtained during life by aspiration through the atlanto-occipital ligament. In dogs that were curarised the mean was 0·089 NaOH per cent. and in two normal rabbits it was 0·099 and 0·085 per cent. The importance of these numbers consists in the evidence which they afford that the cerebro-spinal fluid is not a mere filtration of the plasma of the blood, since it presents less than half the alkalinity of the blood. In the next place, the effects of various reactions, such as tincture of guaiacum, hydrochinone, gallic and pyrogallic acids, peroxide of hydrogen, and ortho-toluidine, have led him to the conclusion that the cerebro-spinal fluid contains a ferment to which he has given the name of cerebro-spinase. This ferment possesses the power of destroying the reducing agent which is normally present in the cerebro-spinal fluid and is capable of oxidising glycose. Professor Cavazzani adduces reasons for supporting the views of Knoll attributing variations of pressure in the cerebro-spinal fluid to venous influence. At the beginning of

[1] THE LANCET, May 3rd, 1902, p. 1281.

asphyxia there is a diminution but subsequently an increase of pressure in the fluid and if the central stump of the vago-sympathetic nerve is stimulated in the dog the fluid ceases to flow through a fistula. The results of his experiments have convinced Professor Cavazzani that the cerebro-spinal fluid is a true secretion and is not lymph in the ordinary sense of the word. As additional evidence in favour of this view Professor Cavazzani has studied the action of the substances termed "lymphagogues" by Heidenhain—namely, peptone and the extract of the heads of leeches, glycose, and chloride and iodide of sodium. In no instance was there any acceleration in the flow of the cerebro-spinal fluid from fistulous openings.

WE have been informed that the Law Fund, the subscriptions to which have been regularly announced in our columns for the last few weeks, will be closed at the end of the month. Any of our readers who propose to subscribe should, therefore, not delay any longer, while we may remind them that a few more subscriptions will now make the fund a complete success.

Mr. Alexander G. R. Foulerton, director of the Cancer Research Laboratories, the Middlesex Hospital, London, W., has been appointed a member of the German Cancer Investigation Committee, the Comité für Krebsforschung.

Sir A. Conan Doyle, M.D., has been appointed Deputy Lieutenant of the county of Surrey.

THE ANNUAL REPORT OF THE CHIEF INSPECTOR OF FACTORIES AND WORKSHOPS FOR THE YEAR 1901.

PART I. REPORTS.

FIRST NOTICE.

THE annual report of Dr. Arthur Whitelegge, the chief inspector of factories and workshops, is published in the form of a blue-book of 292 pages. Statistical tables are to be issued separately and a few necessary figures only are included in the volume which is now issued.

The present book contains a general report upon the work of the Factory Department during the year 1901 and a valuable summary written by Dr. Whitelegge (pp. iii.-xix). This is followed by the sectional reports of the superintending inspectors of the five districts into which the country is divided (pp. 1–150), the reports of the principal lady inspector (pp. 150–192), and those of the examiner of textile particulars (pp. 192–194), of the inspector of cotton cloth factories (pp. 194–204), of the engineering adviser (pp. 204–206), and of the medical inspector (pp. 206–245). The annual report for 1900[1] contained an interesting series of special reports which appeared in the form of appendices. The present blue-book contains two special reports, the first a very interesting one on the fencing of machinery as seen at the Paris Exhibition of 1900 and the second on accidents in docks. The remainder of the volume is occupied by a reprint of the statutory orders concerning factories and workshops which were made during the year 1901 (one of which was issued in regard to home work and the other in regard to birth certificates), a summary of the appeal cases in which the Board of Trade was interested (pp. 272–284), the special rules (established after Arbitration 1901) which are to be in force in the manufacture of earthenware and china, the amended special rules in force in trades in which the handling of hides and skins form a part, and finally the circular letter addressed to occupiers of factories and workshops in which such operations are carried on. The table of contents comprises one page only and, as in the case of the last report, there is no index. This omission, as we have had occasion to point out before, very seriously lessens the value of the report as a work of reference and causes a great waste of time to anyone who wishes to investigate any one particular subject, for such information may be found scattered through the various reports. For example, it may be necessary to look through the reports of each of the five superintending inspectors in order to be sure that no piece of information is missed. It is to be hoped that an index will be published with Part II. of the report, but it would have been much better had it been included in the present volume.

At the end of the year 1901 the number of registered factories was 97,845, as compared with 95,664 in the previous year, and the number of workshops was 143,095 as compared with 137,648. Laundries are included in these estimates, but men's workshops, docks and warehouses are excluded. The amount of work which is done by the department may to some extent be appreciated when it is said that during the year it had to deal with no less than 322,000 statutory reports from occupiers of premises affected by the Factory Acts. Of these reports, 83,760 had relation to accidents, 936 to poisoning contracted in either a factory or a workshop, and 167,000—a large proportion of the whole number it will be observed—had relation to overtime.

The monthly summary of reported accidents is now published weekly in the *Labour Gazette* and in regard to the statistical part it may be sufficient here to give a table comparing the number of accidents reported in the years 1900 and 1901. During the year 1901 there was some improvement in the methods of "fencing" used for the protection of those who work near dangerous machinery, but it was found in many cases that the workmen either rejected or misused the guards which were provided to ensure their safety from injury. Employers, it was found as a rule, were willing to carry out the instructions given to them, but it frequently happened that in the case of newly-introduced machinery which had obvious dangers nothing was done to guard the workers until the attention of the manufacturers was called to the peril by the inspectors. The very valuable report by Mr. C. R. Pendock on the machinery exhibited at the Paris Exhibition incidentally gives some curious information bearing on this subject. It appears that in the case of newly-invented machinery the English manufacturers as a rule do not provide efficient fencing as part of the machine. It is not until the dangers are pointed out that the necessary protective fencing is provided. In this respect some of the new German and French machinery forms a marked contrast to that of England and the report rather leads to the inference that some at least of the foreign makers rather unnecessarily emphasise the importance of the protective guards which they supply with their new invention. The general fact, however, remains that in the case of newly-introduced English machinery fencing is usually unduly neglected and in the case of similar foreign products such fencing is usually provided although, it may be added, it is by no means always particularly effective for the purpose which it is designed to effect. In one district (Blackburn) an accident insurance company has been of service in forcing on manufacturers the use of efficient protection for the operatives. The Employers' Liability Assurance Company requires that those who take out its policies shall fence all dangerous machines.

Accidents in docks continue to cause much loss of life. Shipbuilding is, apparently of necessity, a dangerous trade. An experienced inspector at Newcastle gives it as his opinion that operations in ship construction are, and he fears always must be, more or less of a hazardous character. Serious risk is run in rigging staging at great heights. Moreover, there is danger in working on the raised stages, for they are rarely fixed and they have no protecting rail. These platforms are often as much as 40 feet above the ground and the planks of which they are formed are loose. In some cases, also, a series of such stages is erected at different levels, so that the workers have a double risk—they may either fall off their perches or they may be struck by things falling down upon them from above. Many of the accidents are due to the fault of the workers themselves and it appears that five out of a total of 22 fatal cases which occurred at Newcastle in the year 1901 in connexion with the actual building of ships were due to "carelessness on the part of the other operatives, such as the careless handling or throwing of materials and tools, removal of fastenings, &c." As a rule the men themselves fix the staging on which they

[1] THE LANCET, Sept. 28th (p. 868) and Oct. 12th (p. 998) and 26th (p. 1145), 1901.

work and it seems that in many cases they do not adopt ordinary precautions to ensure the efficient stability of the supports on which their lives depend. In the opinion of Mr. Low of Newcastle this criminal laxity is due to the laziness or to the meanness of the men. "I am afraid," he writes, "the question is merely one of so many minutes lost in unproductive work."

The report of Mr. A. G. H. Thatcher on accidents in building operations and of the means which should be adopted for their prevention appeared in the annual report for the year 1900. We were able to speak of Mr. Thatcher's work[2] in terms of unqualified praise and we recommended that a copy of his report with its illustrations should be in the hands of all builders. The report has at length been embodied in the shape of a memorandum addressed to builders and others concerned and was issued in February last.

The increasing number and importance of electrical generating works and the well-recognised danger which threatens those who work in them have engaged the serious attention of the department, but up to the present time the chief work done by the inspectors has apparently been confined to the southern division of England—at any rate the report of the chief inspector for the southern division is the only one which is specifically referred to in the chief inspector's prefatory remarks on the question. The whole subject is, of course, a comparatively new one and it may be of use here to describe in brief outline the way in which the electrical industry became to some extent under the control of the department. It need hardly be said that the generation of electricity as a commercial enterprise was not foreseen by those who framed the earlier Factory Acts, and finally electrical works only came within the purview of the factory inspectors because they were places in which a dangerous trade was being carried on. A committee was appointed to advise as to the regulations which should become obligatory in factories carrying on this trade and certain recommendations were drawn up and the attention of the owners and managers of electrical works was drawn to them.[3] In future there will be no difficulty as to the question as to whether electrical generating works do or do not fall within the scope of the Factory Acts, for the matter is made clear in the Act of 1901 which defines as a factory any place in which electrical energy is generated or transformed—the only exception being that made in the case of private houses. The report of Mr. W. D. Cramp, the superintending inspector for the southern division of England, contains information derived from London, Southampton, and Bristol, and in addition some valuable notes by Mr. Fearon (peripatetic inspector) who visited a large number of electrical generating works to inquire and to report as to how far the recommendations of the Dangerous Trades Committee had been carried out. The result of his visits was, on the whole, satisfactory. He found that the electrical engineers welcomed the recommendations as being thoroughly practical and that in a very great many cases they had, as far as possible, adopted them in the management of plant which had not been designed with a view to comply with them. Mr. Fearon adds three suggestions of his own. The first two of these appear to be of special value and the first at least is so easy of application and so obvious in intention that there seems to be no reason why it should not be immediately and universally adopted. It may perhaps be useful to give these recommendations *in extenso*, in the hope that they may be seen by some engineers concerned in the work who may not have leisure to wade through a big un-indexed blue-book.

1. All spanners or other tools for work on or near live metal should have moulded handles and box spanners only should be used.
2. The cases of all instruments to which there are high pressure connexions should be earthed for the same reasons as transformer cases are.
3. Experienced men only should be allowed to work in sub-stations or behind switch boards. (P. 30).

In the matter of fire prevention it is satisfactory to record the fact that the Chief Inspector reports that there is a steady advance in the direction of securing adequate provision of the means of escape.

A great part of the work of the factory inspectors consists in investigating the conditions under which the more dangerous trades are carried on. There are at the present time 26 codes of special rules in force for the regulation of these industries, and during the year 1901 7833 works existed in which definite rules were enforced. The number of trades placed under special regulations increases year by year and the number of works to be visited increases also.

During the year 1901 only four cases of phosphorus poisoning occurred in connexion with the manufacture of lucifer matches and in one of these cases the patient had ceased to work at this trade for more than a year. The diminution in the number of these distressing cases is most marked; it is chiefly due to change in the processes of manufacture of matches. The poisonous lucifer match is happily almost extinct.

Twelve cases of arsenical poisoning were notified and of these no less than seven occurred in galvanising works.

An increase in the number of cases of anthrax has of late years caused special attention to be directed to discover the source of origin of the infection—that is to say, from what part of the world the diseased skins are obtained. Special rules were enforced in factories in which skins were handled in the years 1898–99 and in 1901 a conference was held at the Home Office with the employers of the labourers engaged in the trade. A new code of rules was drawn up and these are now in force in 122 works in which there is danger of infection from hides and skins. The result of careful inquiry showed that the chief places from which infected skins were imported were China and the west coast of India.

It may be remembered that the factory report for the year 1900 contained an account of a special investigation made in aerated water factories to determine the cause of the frequency of the accidents which occurred in them. It was found that many of the operatives did not use the eye-guards which were provided for them and that many of the workers, especially the East Anglians, complained that the guards were injurious to the sight. Careful inquiry proved that the supposed ill effects of the guards had no basis in fact. The inspectors of factories therefore received definite instructions to insist that the rules drawn up for the protection of the workpeople should in this, as in other cases, be rigidly enforced.

The factories in which wall-papers are made have been conducted under voluntary regulations since September, 1901. The report on this trade which was made by Commander Smith was printed in the annual report for the year 1900. The fact that those engaged in the business agreed to the regulations without proceeding to arbitration was doubtless due to a great extent to the fact displayed by this officer. The number of factories is not great—22 in all—and it is extremely satisfactory that the rules have been adopted without the exercise of compulsion and that those responsible for the business are alive to the advantages of efficient sanitary precautions in carrying on their trade. There is probably no branch of industry in which more real progress has of late years been made in this direction.

[2] THE LANCET, Oct. 20th, 1901, p. 1147.

[3] The committee which drew up the regulations consisted of H. J. Tennant, May Tennant, Thomas Oliver, M.D., C. V. Boys, F.R.S., and H. P. Smith.

AT the meeting of the Gloucestershire county council held on July 7th it was reported that during the past quarter 116 samples had been analysed by the public analyst, only five of which were found to be adulterated.

DINNER OF THE INCORPORATED MEDICAL PRACTITIONERS' ASSOCIATION.—The eleventh annual dinner of this association was held on July 9th at the Holborn Restaurant, London, W.C., when Dr. W. G. Dickinson (the President) occupied the chair. In proposing the toast of "The King" Dr. Dickinson said that humanly speaking the King owed his present recovery to the progress of the science and art of surgery during the last few years. In proposing the "Houses of Parliament" Mr. George Brown said that the medical profession was very much indebted to Mr. R. Ambrose, M.P., and other Members of the House of Commons for what they had done in amending the Midwives Bill. Mr. Ambrose in response said that there was no profession which had fewer friends in Parliament than the medical profession. If the profession wanted sympathy and help in the House of Commons it ought to organise outside. He hoped that the day was not far distant when the medical profession would be as well represented at Westminster as was the legal profession. Dr. F. J. Allan proposed the toast of the "Incorporated Medical Practitioners' Association" and referred to the inadequate representation of the general practitioners on the General Medical Council.

Obituary.

JOHN CURNOW, M.D., F.R.C.P. LOND.,

PROFESSOR OF CLINICAL MEDICINE IN KING'S COLLEGE, LONDON, AND PHYSICIAN TO KING'S COLLEGE HOSPITAL.

DR. JOHN CURNOW, whose death was announced in our columns last week, was born at Towednack, near St. Ives, Cornwall, in 1846. His father, Andrew Curnow, was a Cornish yeoman and belonged to an old Cornish family—indeed, Curnow signifies "of Cornwall," a name which is also perpetuated in Port Curnow. He was very proud of this Cornish descent and throughout his life kept up his connexion with Cornwall, never failing in his summer holidays to visit Penzance, on which occasions he was largely called into consultation by the local practitioners, and indulged in long spells of his favourite amusement, sea-fishing. Before coming to London Curnow was a pupil with a local practitioner, a Dr. Doidge, one of the leading medical men in the west of Cornwall, and thus early became acquainted with pharmacy and with general practice. Often in later days he spoke of the practical advantages he had derived from the somewhat rough work that he was called upon to do. That he was diligent and careful is shown by the local name bestowed upon him: "Dr. Doidge's young intelligent." When he came to London in 1864 he joined the medical school of King's College, gaining an entrance scholarship, the other scholars in that year being the late Professor Baxter and Professor A. H Garrod, a son of Sir Alfred Garrod. At the end of the first year of studentship these three were again awarded scholarships; their early association led to the formation of friendships which were only terminated by death.

In 1865 Curnow matriculated at the University of London and was awarded honours, thus inaugurating a university career of almost unexampled brilliancy. In 1868 at the Intermediate M.B. examination he gained the exhibition and gold medal in anatomy and the exhibition and gold medal in organic chemistry, materia medica, and pharmaceutical chemistry. In this year also he qualified as a Member of the Royal College of Surgeons of England. In 1870 he passed the M.B. examination and obtained the University scholarship and gold medal in medicine and the University scholarship and gold medal in obstetric medicine, together with honours in forensic medicine. In 1871 he passed the M.D. examination and was awarded the gold medal. It is a characteristic fact that, although working to the best of his ability, he never expected to take honours at these examinations and often remarked to his fellow-students that he was "going to do nothing this time." This modest self-depreciation was often expressed even after the examination was completed and before the publication of the result. Curnow did not say these things that they might be contradicted; modesty was a true characteristic of the man, and he really did not know what an excellent grasp he had of his subjects. At the M.D. examination, when complimented by one of the examiners upon his diagnosis of a very difficult case, he simply remarked, "Oh, but I am plucked in the logic paper." In fact, in his own experience he showed, as he often remarked, that the best candidates do not know how well they have done, and he would add with a smile, "The converse holds good."

In 1870, with Mr. J. B. Perrin, he was made demonstrator of anatomy at King's College under Professor Partridge, whom he succeeded in 1873, the year in which he became a Member of the Royal College of Physicians of London. We mention this fact because it proves that by this time Curnow had definitely decided upon entering the medical side of his profession, and it is very rare for a physician to make a special study of anatomy. Curnow held this professorship until 1896—that is to say, for 23 years—when he was elected professor of clinical medicine. The methods of Partridge and Curnow presented a curious contrast; the former amused and instructed his audience at the same time, enforcing his point or fixing a fact by anecdote, by practical quotations (often diverted from their original meaning), or by some trivial joke; the latter, with what has been aptly termed "the seriousness of youth," kept rigidly to the subject, demonstrated, tabulated, and catechised until he felt sure that knowledge had been transmitted. As a professor of anatomy Curnow never spared himself, he multiplied lectures and demonstrations according to the needs of his class, and in the dissecting room, especially while conducting the lengthy demonstrations for the candidates for the First Fellowship of the Royal College of Surgeons of England, he acquired that personal interest in his students which led him to follow their subsequent careers with an almost paternal eye. One of the best anatomists in England, now occupying an important professorial chair of that science, writes to us as follows: "Curnow was an enthusiastic teacher and a keen observer. He maintained the traditions of the school so intimately associated with the researches of the late Professor John Wood. Amongst his most important contributions to anatomical literature were his papers on 'Variations in the Arrangement of the Extensor Muscles of the Forearm,' 'Muscular Irregularities,' and 'Notes on Irregularities in Muscles and Nerves.' He also from time to time recorded many interesting examples of osseous, vascular, and muscular anomalies. He had the gift of clothing the bare facts of anatomy with an interest which so impressed his pupils that many to this day will recall his telling demonstrations and apt illustrations. But more than all Curnow will ever be remembered by his friends and pupils alike for his broad-minded sympathies and willingness to help where help was needed." In short, Curnow was unsparing of his own pains and sympathetic with the troubles of his pupils—a combination that makes the really great teacher as well as the really fair examiner. The universities of London, Durham, and Victoria at different times availed themselves of his services as examiner.

In 1874, when there was a vacancy at King's College Hospital for an assistant physician, Dr. E. B. Baxter and Dr. Curnow were both candidates and the council solved the difficulty of making a selection between two such men by appointing them both assistant physicians and leaving them to share the work. In 1878 Curnow became physician to the *Dreadnought* Seamen's Hospital and used the opportunities afforded him by the appointment to become familiar with many of the phases of tropical disease. He severed his connexion with this institution in 1897, after nearly 20 years' work, and when he was senior visiting physician, in circumstances which caused much controversy and which were fully reported in our columns. There is no doubt that he felt keenly giving up a post which he had held so long and work which interested him so much, but the situation, as he conceived it, requiring his resignation he tendered it without hesitation. In 1890 he was made physician to King's College Hospital with care of in-patients. As a physician his skill speedily gained the confidence of his patients, and this was deepened into affection by his obviously genuine fellow-feeling with them when in trouble. In the wards he taught well, both by precept and by practice. Students often marvelled at the ease, rapidity, and accuracy of his diagnosis, forgetting that his anatomical work had cultivated in him the habit of close observation and the employment of every sense. In treatment his tendency was to avoid many of the newer remedies, but the advice that he gave was always marked by simplicity and firmness which commanded respect and ensured confidence. In prognosis he was often startling and bold. One of his friends in writing of him to us tells us how once a physician in a provincial hospital took Curnow round his wards and was much surprised at the prognoses that he gave in many cases, but some months later he had to confess that in each instance the prognosis had been verified. Curnow was a man who could keep the essentials of a medical problem before him. He did not lose sight of detail but he knew how to keep detail in subordination—a faculty which no doubt helped him in making his accurate forecasts. Although he never had a large consulting practice, friends, colleagues, and former students (the terms are synonymous) continually sought his professional aid and were invariably helped by his cheery optimism and by his readiness to sacrifice his own convenience in their service. To consult Curnow was not like consulting many physicians; his personality robbed the ordeal of its solemnity. There never was a man who talked and looked less like the popular conception of the resourceful physician or studious man of science, and no doubt this absence of conventionality counted for something in the fact that Curnow's position in the medical world was never that which he ought to have commanded. He laughed heartily

JOHN CURNOW, M.D., F.R.C.P. LOND.,
FOR 23 YEARS PROFESSOR OF ANATOMY IN KING'S COLLEGE, LONDON.

and talked freely; he had no repose or dignity of manner, as the phrase is generally understood; but, on the other hand, he abounded in shrewdness, he spared no pains to ascertain the cause of trouble, and the dullest of his patients could not fail to see that he was receiving the most careful attention from a man who was honestly determined to help him if it were possible.

Curnow was dean of the medical department at King's College from 1883 to 1896 and was unremitting in his endeavours to promote the interests of the school. It will be remembered that this period embraced the initial stages of the movement for extending the scope of university teaching in London. Curnow felt deeply on this subject, and as a member of the annual committee of the university and as representative of King's College on the committee of the deans of the medical schools, he thoroughly mastered the details of a complicated subject entangled by conflicting interests, and though he spoke comparatively rarely he expressed his views very forcibly in these columns. As dean of the medical department of King's College he was perhaps too intent upon guiding matters in the directions that he believed to be right; his judgment was rarely at fault, but his administration was too zealous to be impartial. He followed his own dictates of right and wrong and his evident sincerity commanded the respect of all, even of those who differed from him in opinion.

Although he wrote with facility Curnow's signed contributions to medical literature are not very numerous. In 1879—the year after he was made a Fellow of the Royal College of Physicians of London—he delivered the Goulstonian Lectures, taking for his subject "The Lymphatic System and its Diseases." These lectures were published in our columns. In the *Journal of Anatomy and Physiology* he wrote Notes of Some Muscular Abnormalities and Nerve Irregularities, and a paper on Variations in the Arrangement of the Extensor Muscles of the Forearm in the same journal contains the result of the original researches to which allusion has already been made above. He also contributed several articles to the first edition of Quain's Dictionary of Medicine, and published in our columns lectures on the Treatment of Typhoid Fever by Alcohol and the Cold Wet-pack, and on Cardiac Failure and Dilatation of the Heart. In the King's College Hospital Reports he published a most interesting historical sketch of King's College and King's College Hospital.

For more than 25 years Dr. Curnow was a member of the editorial staff of THE LANCET and we were wont to rely much upon his judgment and good sense. He was a man who could maintain his own view without quarrelling with those who differed from him and, as we have indicated, who could master the intricacies of a question without losing sight of the broad essentials. He was, therefore, a man to whom an important subject could be relegated with a singular sense of security; we felt that no pains would be spared that were necessary to make all the points clear to our readers and we knew that every side of the question would be weighed before judgment was pronounced, and that such judgment would follow the writer's sense of right and not be dictated by any private bias. He placed our readers in a position to understand all the arguments for and against the reconstitution of the University of London in a series of articles full of close reasoning, and other communications to our columns upon many different aspects of medical education have been widely read and quoted. Our object and his—viz., to secure for the London student the same facilities for obtaining a medical degree that are enjoyed by the Scottish student and the student at the provincial medical schools—has not yet been attained, but, at any rate, the London student owes to the pen of John Curnow the persistent advancement of his just claims that has appeared in THE LANCET. During the last decade his contributions to our columns have been much less frequent and a disinclination towards the actual labour of writing, which he always admitted to be strong upon him, grew still stronger. But to the day of his death he remained a member of our staff upon whose great experience we could rely for all information respecting educational questions.

The story of the life of John Curnow will be incomplete without reference to his work in Freemasonry, in which he took a great deal of interest. He was initiated many years ago in the Mount Sinai Lodge, No. 121, Penzance. He was a Founder and first I.G. of the University of London Lodge, No. 2033, and subsequently passed through the chair of Worshipful Master of that Lodge. He was, moreover, a Founder and one of the first Stewards of the Cornish Lodge, No. 2369, of which also he was a Past Master. He was made a Royal Arch Mason in the Weyside Chapter (Woking), No. 1395, and served as M.E.Z. of that chapter for two years in succession and he had the honour of being a Past Grand Registrar in the Provincial Grand Chapter of Surrey. By a curious coincidence the next name to his in the "Deaths" in the *Times* was that of Colonel John Davis, A.D.C., the Provincial Grand Master of Surrey, who also died suddenly from pneumonia.

Dr. Curnow, who was only 56 years of age, had been in failing health for the past year and for some weeks before his death was troubled with cough and vague thoracic pain. He did not observe any precaution, apparently never understanding how ill he was, and the end when it came was very sudden. He went round his wards at King's College Hospital on Friday, July 4th, when he was noticed to be suffering severely and complained of pain beneath the clavicles. Acute pneumonia supervened and he died from syncope on Saturday morning. Dr. Curnow was unmarried; he leaves two sisters but no male relatives and we desire to express to those ladies our sincere sympathy with them in their great loss.

EDMUND DELAFOSSE BOND, M.A., M.B., B.CH. OXON., M.R.C.S. ENG., L.R.C.P. LOND.

WE regret to have to record the death at the early age of 28 years, of Dr. E. D. Bond, a young physician of great promise, who expired on July 1st at the London Fever Hospital, Islington, after a short illness, having contracted scarlet fever in the course of his duties. He was the youngest son of the late Rev. Frederick Hookey Bond, M.A., who for 25 years was headmaster of the Marlborough Grammar School, and of Mrs. Bond, now of 16, Brock-street, Bath, and was a near relative of Dr. Francis Thomas Bond, honorary secretary of the Jenner Society. He was educated at St. Peter's School, Weston-super-Mare, and at Clifton College, after which he became an undergraduate of Keble College, Oxford. He had a distinguished career at the University and obtained first-class honours in natural science. He next entered St. George's Hospital with an entrance scholarship, and was there at the time that he fell ill, filling the post of resident assistant house officer. Dr. Bond was not only highly valued and respected for his ability by all his colleagues, but his amiable and gentle nature had secured for him a wide circle of attached friends.

THE SIXTH INTERNATIONAL CONGRESS OF HYDROLOGY, CLIMATOLOGY, AND GEOLOGY.

DOUBTLESS it is very wrong, but there is no concealing the fact that congresses, especially international congresses, provide an excellent excuse for holiday excursions and picnics. From this point of view the Sixth International Congress of Hydrology, Climatology, and Geology holds out more than usual temptations. It is to assemble at Grenoble during the first days of October. Now, Grenoble is not only a fine and large town but it is certainly one of the most picturesque cities in France. Just outside is the fashionable thermal station of Uriage, the "Moucherotte," and thence there are excursions to the valley of "Graisivaudan," the valley of the Isère, the celebrated monastery of the "Grande Chartreuse," and the abyss and bridge of Saint Bruno. The glaciers of La Meije, Aix-les-Bains, and the beautiful scenery of Savoy are all close at hand. The lovers of mountainous and romantic scenery could scarcely select a more suitable base for their excursions than the town of Grenoble and as members of the Congress they will not only obtain reductions in the railway fares but various facilities for visiting places of interest. But if the pleasurable side of this gathering is most attractive the Congress will be none the less important and interesting from the medical and the scientific point of view. It will be the sixth international congress of this description that has been held. The first congress met at Biarritz in 1886. The second congress, attended by the official representatives of 14 different Governments and unofficial representatives from

England, the United States, Switzerland, and other countries, met in Paris during the Universal Exhibition of 1889.[1] The last congress was held at Liège in Belgium. The Organising Committee of the forthcoming congress has its headquarters at Paris and its President is Dr. Albert Robin who is President of the General Association of Medical Men practising in the health resorts of France. Then there are Dr. Leudet of Eaux-Bonnes, ex-President of the Hydrological Society; Professor Fredet of the Medical School of Clermont Ferrand; Dr. de Ranse, and others. But all communications must be addressed to the Secretary-General of the congress, Dr. Fernand Berlioz, École de Médecine de Grenoble, Isère, France. To be a member of the congress it suffices to forward a subscription of 20 francs and all the printed reports will be sent gratuitously to the members. Reports on the following subjects will be presented to the Congress and discussed: The Action of Mineral Waters on the Tissues, by Professor J. Renault of Lyons; Practical Methods for the Bacteriological Analyses of Mineral Waters, by Dr. Bordas; Chemical Analyses of Mineral Waters and their Therapeutic Applications, by Dr. Garrigon; and the Legal Measures that should be taken to Prevent Frauds in the Sale of Mineral Waters, by Dr. Bouloumie. These papers come under the head of "Scientific Hydrology." Then there is to be a section of "Clinical Hydrology" in which reports on the Hydromineral Treatment of Pulmonary Phthisis, by Dr. Leudet and Dr. Schleumer, and other papers on the Treatment of Skin Diseases, Diseases of the Digestive Organs, and of Constitutional Weakness in Children by the Use of Mineral Waters, Baths, &c., will be read. A fourth section deals with Climatology and reports will be submitted on the Influence of Temperature and Altitude on the Respiratory Functions; on the Meteorological Conditions Necessary for the Installation of a Sanatorium; and on the Indoor and Outdoor Treatment at Sanatoriums. Finally, there is a Geological section where the question of the preservation of mineral waters, the relations of the mineral waters of the Dauphiné and the geology of the soil, the statistics of the the mineral springs of Savoy and the Dauphiné, and the geological conditions and the origin of the mineral waters of Oriol and La Motte (Isère) will be discussed. Of course, many other questions will arise out of these French papers, particularly as members representing other nationalities will also read papers. It is likewise to be hoped that there will be some discussion on the sanitary condition of the various health resorts, for this is a very important question which many local authorities are apt to neglect. In view of the interest of the congress itself and the splendid opportunity of visiting some of the most celebrated and beautiful thermal stations of Europe it is very probable that the meeting will be numerously attended.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

ELECTION OF PRESIDENT.

A QUARTERLY meeting of the Council was held on July 10th, the President, Sir HENRY G. HOWSE, being in the chair.

The PRESIDENT reported the re-election of Mr. Howard Marsh, and the election of Mr. John Hammond Morgan, C.V.O., Mr. Henry Hugh Clutton, and Mr. Charles William Mansell Moullin as members of Council.

The PRESIDENT stated that Mr. Moullin being fourth on the poll would be the substitute member of Council for the late Sir William Mac Cormac.

Mr. Marsh, Mr. Morgan, Mr. Clutton, and Mr. Moullin were introduced, made declarations in the terms of the oath prescribed by the Charter of 1800, and took their seats as members of the Council.

Sir Alfred Cooper was nominated a trustee of the Cancer Research Fund to represent the Royal College of Surgeons of England.

The Council nominated the President and Mr. John Langton and Mr. Henry Morris as members of the Executive Committee to be constituted under the Cancer Research Fund scheme and these members were instructed to elect in the name of the College the president and the vice-presidents of the Cancer Research Fund. Mr. Henry Morris was appointed treasurer of the fund subject to the approval of the Royal College of Physicians of London.

A Member of the College who had previously been struck off the Medical Register by the General Medical Council was removed from being a Member of the College.

The PRESIDENT stated that the committee appointed to receive a deputation from the Association of Licentiates of the Royal College of Physicians of London and Members of the Royal College of Surgeons of England would submit a report at the next meeting of the Council.

Sir Henry Greenway Howse was unanimously re-elected President of the College and Mr. John Tweedy and Mr. A. W. Mayo Robson were elected Vice-Presidents. The following appointments were made:—Hunterian Professors: Mr. Charles Stewart, Mr. William McAdam Eccles, and Mr. Arthur Keith; Arris and Gale Lecturer: Mr. John Herbert Parsons; Erasmus Wilson Lecturer: Dr. Charles Bent Ball, Hon. F.R.C.S. Eng.

Public Health and Poor Law.

LOCAL GOVERNMENT BOARD.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Birmingham Urban District.—Dr. Alfred Hill records a satisfactory diminution in the number of cases of enteric fever, a result which he ascribes largely to the provision of isolation accommodation for this disease. The general death-rate of the city for 1901 was 19·9 per 1000, as against an average for the last quinquennium of 20·4. The ward rates for 1901 ranged from 29·7 to 13·1 per 1000. In the three wards having the lowest general rate measles caused a death-rate of 0·28, as against a rate of 0·99 per 1000 in the three wards having the highest general death-rate. Somewhat similar divergencies occurred in the case of whooping-cough and diarrhœa. With scarlet fever, on the other hand, the wards with the lowest general death-rate yielded a higher scarlet fever case-rate than the wards with the highest general death-rate. The highest rate with respect to enteric fever and diphtheria was, however, in the three wards with the highest general death-rate. From phthisis the death-rate was 2·70 per 1000 in the bad wards and only 1·14 in the good ones. The cancer and heart-disease rates in the two groups were nearly identical. Diphtheria antitoxin is distributed gratuitously by the sanitary authority and a very gratifying diminution of fatality-rate has been apparent. The women health visitors have, as usual, done good service in Birmingham, and amongst other things they have turned their attention to children who were sent home from school in consequence of having vermin in their hair. The house accommodation for the labouring classes in Birmingham is, Dr. Hill reports, quite inadequate, and he urges the town council to undertake the provision of such dwellings. He has also made a representation under the Housing of the Working Classes Acts in respect of an unhealthy area possessing a population of some 2429. The mean death-rate of the whole area for the last two years was 39·5 per 1000.

Manchester Urban District.—In his last quarterly report Dr. J. Niven states that during the period in question eight cows were proved to be suffering from tuberculous udders. Of these eight, one was killed, two are still at the farms, concerning three there is no information available, and the remaining two were sold in the open market. The want of all proper control over cows with tuberculous udders is deplorable and it is to be hoped that some reform in this direction will soon be brought about. When milk is taken from the Manchester railway stations and, on examination, is found to be tuberculous, the farm which furnished the sample is forthwith visited, and milk from cows with suspicious-looking udders is examined, first microscopically, and secondly, by means of inoculation. No action is taken until the milk has been definitely established to be tuberculous.

Cardiff Port Sanitary District.—The disinfection of the holds of ships and the destruction of rats therein are matters of such importance from the point of view of the prevention of diseases that a further reference[1] to certain experiments

[1] See THE LANCET, Oct. 19th, 1889, p. 813.

[1] THE LANCET, June 21st, 1902, p. 1801.

recently carried out at Cardiff with the Clayton fire-extinguishing apparatus may be useful. Dr. Edward Walford, who supervised the experiments, caused a number of rats confined in a cage to be placed in different parts of the hold of a ship and the sulphur dioxide generated by the Clayton apparatus was forced in at an average strength of 10 per cent. The rats placed at the bottom of the hold were killed almost immediately and those placed about three feet below the level of the deck were dead after three hours. In addition to these experiments strips of fabric were soaked in liquid cultures of plague, cholera, enteric fever, and anthrax organisms and were exposed in small glass dishes with loose covers. After an exposure of 12 hours to the sulphur fumes all save the anthrax culture were killed. From this it is inferred that all the non-sporing organisms were killed and that hence the experiments were satisfactory, as sporing and harmful organisms are not likely to be encountered in practice in the holds of ships.

Brighton Urban District.—Dr. A. Newsholme furnishes in his current annual report figures showing for each of the last three years the number of cases of diphtheria amongst scholars attending the several elementary schools in Brighton. The board school rates for 1901 averaged from 0·2 to 7·7 per cent. of the average attendance, while the voluntary school rates ranged from 0·2 to 4·3 per cent. As to this discrepancy between the board and voluntary schools Dr. Newsholme fails to find an adequate explanation in geographical distribution or in structural defects. He is of opinion that there must be differences in administration, more particularly in the direction of the eagerness on the part of the school board authorities to whip up absentees, and hence the liability to bring together children suffering from slight sore-throat, &c. This is certainly an interesting speculation, but we should be glad to see the comparison made in other towns before altogether accepting the thesis. We are glad to see that Brighton is, in common with many other towns, now affording facilities for the supply of diphtheria antitoxin and that a supply of this material can be obtained at the public health offices during the day and at the police-offices during the night. Dr. Newsholme very properly urges the early administration of antitoxin, and he points out the desirability of not waiting until the nature of the disease is definitely established. Certainly very valuable time may be lost by waiting, and the delay is not unlikely to turn the scale between life and death. Dr. Newsholme has never seen any injurious effects from 500 units administered as a prophylactic, and the Brighton Corporation has sanctioned a payment of 2*s.* 6*d.* for every dose thus administered at the request of the medical officer of health to children living in the same house as a child already suffering from diphtheria—that is to say, if the parents are too poor to bear the expense.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8661 births and 4120 deaths were registered during the week ending July 12th. The annual rate of mortality in these towns, which had been 14·9, 15·1, and 15·4 per 1000 in the three preceding weeks, declined to 14·5 per 1000 last week. In London the death-rate was 14·6 per 1000, while it averaged 14·4 in the 75 other large towns. The lowest death-rates in these towns were 7·6 in King's Norton, 6·2 in Walthamstow, 6·5 Grimsby and in Rotherham, 7·1 in Great Yarmouth, 8·0 in East Ham and in Leicester, 8·3 in Hornsey, and 9·3 in Handsworth; the highest rates were 20·1 in Bootle and in Sunderland, 21·1 in Manchester, 21·9 in Newcastle-upon-Tyne, and 23·3 in Coventry. The 4120 deaths in these towns in the same week included 533 which were referred to the principal infectious diseases, against 476 and 522 in the two preceding weeks; of these 533 deaths 131 resulted from whooping-cough, 124 from diarrhœa, 116 from measles, 54 from diphtheria, 45 from scarlet fever, 45 from "fever" (principally enteric), and 18 from small-pox. In Hornsey, Reading, Leicester, and four other smaller towns NO death from any of these diseases was registered; while they caused the highest death-rates in Norwich, Bootle, Wigan, Warrington, Burnley, Barrow-in-Furness, and West Bromwich. The greatest proportional mortality from measles occurred in Bristol, Birkenhead, Bootle, Rhondda, Rochdale, Plymouth, Warrington, and Barrow-in-Furness; from scarlet fever in Burnley, Stockton-on-Tees, and West Bromwich; from whooping-cough in South Shields, Bootle, Barrow-in-Furness, and Norwich; from "fever" in Ipswich and Barrow-in-Furness; and from diarrhœa in Preston and Bootle. The mortality from diphtheria showed no marked excess in any of the large towns. Of the deaths from small-pox registered during the week 13 belonged to London, two to Swansea, and one each to Croydon, Tottenham, and Walthamstow, but not one to any other of the 76 large towns. The number of small-pox patients under treatment in the Metropolitan Asylums hospitals, which had been 861, 837, and 677 at the end of the three preceding weeks, had further declined to 579 at the end of the week; 57 new cases were admitted during the week, against 107, 129, and 58 in the three preceding weeks. The number of scarlet fever patients in these hospitals and in the London Fever Hospital on Saturday, July 12th, was 2352, against 2450, 2496, and 2432 in the three preceding weeks; 272 new cases were admitted during the week, against 378, 276, and 255 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 173, 194, and 168 in the three preceding weeks, further declined to 159, and were 12 below the corrected average number. The causes of 41, or 0·9 per cent., of the deaths in the 76 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Portsmouth, Leicester, Bolton, Salford, Bradford, Leeds, Cardiff, and in 48 other smaller towns; the largest proportions of uncertified deaths were registered in Ipswich, Liverpool, and South Shields.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 19·2 and 16·3 per 1000 in the two preceding weeks, further declined to 16·2 per 1000 during the week ending July 12th, but showed an excess of 1·7 per 1000 over the mean rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 13·5 in Aberdeen and 14·4 in Greenock to 17·9 in Edinburgh and 19·2 in Paisley. The 523 deaths in these towns included 22 which were referred to measles, 15 to diarrhœa, 14 to whooping-cough, six to "fever," three to diphtheria, and two to scarlet fever, but not one to small-pox. In all 62 deaths resulted from these principal infectious diseases in the week, against 54, 57, and 66 in the three preceding weeks. These 62 deaths were equal to an annual rate of 1·9 per 1000, which was also the death-rate in the week from the same diseases in the 76 large English towns. The fatal cases of measles, which had been 18, 15, and 13 in the three preceding weeks, again rose to 22, and included 12 in Edinburgh, four in Glasgow, and three in Paisley. The deaths from diarrhœa, which had been 17, 16, and 24 in the three preceding weeks, fell again to 15 and included eight in Glasgow and four in Edinburgh. The fatal cases of whooping-cough, which had been 14 and 16 in the two preceding weeks, again declined to 14 and included six in Glasgow and three in Edinburgh and in Aberdeen. The deaths from scarlet fever numbered two while the fatal cases of diphtheria were three and showed a slight decline from recent weekly numbers. The deaths referred to diseases of the respiratory organs in these towns, which had been 101 and 87 in the two preceding weeks, further declined to 74 and were just below the number in the corresponding period of last year. The causes of 19, or nearly 4 per cent., of the deaths registered in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 17·9, 19·9, and 19·1 per 1000 in the three preceding weeks, further declined to 16·9 per 1000 during the week ending July 12th. During the previous four weeks the death-rate had averaged 19·2 per 1000, the rates during the same period being 14·6 in London and 17·4 in Edinburgh. The 123 deaths of persons belonging to Dublin registered during the week under notice showed an excess of 16 from the number in the preceding week, and included 17 which were referred to the principal infectious diseases, against 10, eight, and nine in the three preceding weeks; of these, six resulted from measles, four from "fever" and also from diarrhœa, two from whooping-cough, and one from diphtheria, but not one from small-pox or scarlet fever. These 17 deaths were

equal to an annual rate of 2·3 per 1000, the death-rate last week from the same diseases being 2·0 in London and 3·9 in Edinburgh. The fatal cases of fever were again four last week, and the deaths from measles, which had been four and two in the two preceding weeks, increased to six. The 123 deaths in Dublin last week included 19 of children under one year of age and 28 of persons aged upwards of 60 years. The deaths of infants were one fewer than the number recorded in the previous week, while those of elderly persons showed a decrease of seven. Four deaths from violence and four inquest cases were registered, and 48, or more than one-third, of the deaths occurred in public institutions. The causes of two, or nearly 2 per cent., of the deaths registered in Dublin last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Surgeons: C. R. Rickard to the *Moorhen* and E. R. L. Thomas to the *Boscawen* for the *Dolphin*.

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel John Martin retires on retired pay. Dated June 26th, 1902.

Captain T. P. Jones joins at Aldershot for duty and Lieutenant M. A. Cholmeley (Militia) takes over medical charge of the 2nd Infantry Brigade at Aldershot. Lieutenant Stirling takes over the charge of the Louise Margaret Hospital at Aldershot and also assumes medical charge of the troops encamped at Garrison Gorse. Captain J. Grech assumes medical charge of the troops at Bisley. Major G. F. Alexander is appointed to the medical charge of the Isolation Hospital at Aldershot. Major G. H. Barefoot has left Aldershot for a tour of duty in the West Indies. Major F. J. Greig is appointed Instructor at the Depôt Training School at Aldershot. Captain W. E. P. V. Marriott is appointed to the medical charge of the Cavalry Brigade at Aldershot and Major R. Caldwell joins at Aldershot for the medical charge of Royal Horse and Royal Field Artillery.

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Captain A. P. Arnold to be Surgeon-Major.

ROYAL ARMY MEDICAL CORPS (MILITIA).

The undermentioned Captains to be seconded:—T. W. G. Kelly, H. E. Mortis, and J. E. O'Connor.

IMPERIAL YEOMANRY.

Duke of Lancaster's Own: Surgeon-Lieutenant Leonard Greenham Star Molloy resigns his commission and is appointed Lieutenant. West Somerset: Charles Farrant to be Surgeon-Lieutenant.

VOLUNTEER CORPS.

Royal Garrison Artillery (Volunteers): 1st Cornwall (Duke of Cornwall's): Surgeon-Lieutenant J. Ratcliff-Gaylard, from 2nd Volunteer Battalion the Manchester Regiment, to be Surgeon-Lieutenant. 1st Devonshire: Oliver Eaton to be Surgeon-Lieutenant. 1st Norfolk: Surgeon-Lieutenant A. M. Ross resigns his commission.

Rifle: 3rd Volunteer Battalion the Queen's (Royal West Surrey Regiment); Surgeon-Lieutenant J. F. Hall to be Surgeon-Captain. 4th Volunteer Battalion the Queen's (Royal West Surrey Regiment): Surgeon-Lieutenant A. M. Hickley to be Surgeon-Captain. 1st (Exeter and South Devon) Volunteer Battalion the Devonshire Regiment: Surgeon-Captain R. Pickard is borne as Supernumerary whilst serving with the Bearer Company of the Devon Volunteer Infantry Brigade. 3rd Volunteer Battalion (the Prince Albert's Somersetshire Light Infantry): Surgeon-Captain F. St. J. Kemm resigns his commission. 1st Volunteer Battalion the Worcestershire Regiment: Surgeon-Lieutenant J. H. Wilkinson resigns his commission. 3rd Volunteer Battalion the Duke of Wellington's (West Riding Regiment): Surgeon-Lieutenant D. Walker to be Surgeon-Captain. 1st Volunteer Battalion the King's Own (Yorkshire Light Infantry): Surgeon-Major E. Lee to be Brigade-Surgeon-Lieutenant-Colonel whilst holding the appointment of Senior Medical Officer to the South Yorkshire Volunteer Infantry Brigade. 2nd Volunteer Battalion the Manchester Regiment: The resignation of Surgeon-Lieutenant J. Ratcliff Gaylard, which was announced in the *London Gazette* of May 27th, 1902, is cancelled at his own request.

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

Leeds Company: Algernon Edward Luke Wear to be Lieutenant.

VOLUNTEER INFANTRY BRIGADE BEARER COMPANIES.

Devon: Surgeon-Captain E. P. A. Mariette, from the 2nd Volunteer Battalion the Devonshire Regiment, to be Surgeon-Captain, and to command under paragraph 55A Volunteer Regulations. South Wales Border: The undermentioned gentlemen to be Surgeon-Lieutenants: John Francis Dwyer and Reginald Cowie.

THE ORDER OF ST. JOHN OF JERUSALEM.

The Prince of Wales, as Grand Prior of the Order of St. John of Jerusalem in England, presided at a meeting held at St. James's Palace on July 14th, when His Royal Highness presented a special medal bestowed by the Order for conspicuous service during the late war, the long service medal, and other medals and certificates for acts of gallantry in saving or attempting to save life on land. The following received awards for conspicuous services to the ambulance department of the Order:—

(*a*) In connexion with the mobilisation of the detachments of the St. John Ambulance Brigade who proceeded on active service to South Africa, and with the despatch of ambulance material and medical comforts for the sick and wounded troops at the seat of war.

Viscount Knutsford, G.C.M.G., Director of the Ambulance Department and Chairman of the St. John Ambulance Association.

Viscountess Knutsford, Chairman of the Special Committee formed to despatch medical comforts to the brigade units.

Colonel Sir Herbert C. Perrott, Secretary of the Order and Chief Secretary of the Ambulance Department.

Colonel C. Bowdler, Chief Commissioner, St. John Ambulance Brigade.

Lieutenant-Colonel C. J. Trimble, V.D., L.R.C.P. Edin.
Mr. Stuart C. Wardell.
Lieutenant-Colonel George S. Elliston, V.D., M.R.C.S. Eng.
Inspector-General Belgrave Ninnis, M.D. St. And., R.N.
Mr. William Vernon, M.R.C.S. Eng.
Major Charles H. Milburn, M.B. Durh.
} Deputy Commissioners St. John Ambulance Brigade.

Mr. W. J. Church-Brasier, Brigade Chief Superintendent.

Lieutenant-Colonel Richard Holbeche, Librarian of the Order, and

Mr. William G. Barnes, jun., who both supervised for many months the dispatch of ambulance material and medical comforts for the troops.

Mr. William R. Edwards, A.C.A., Accountant of the Order and Accountant and Storekeeper of the St. John Ambulance Association.

Mr. William H. Morgan, Chief Superintendent of the Metropolitan Corps, St. John Ambulance Brigade.

(*b*) In recognition of long and efficient service to the St. John Ambulance Association and in the St. John Ambulance Brigade.

William Henry Irvin Sellers, M.B. Edin., Honorary Associate of the Order, Chief Surgeon, Preston Corps, St. John Ambulance Brigade.

Archibald Alexander George Dickey, M.D. R.U.I., Honorary Associate of the Order, Honorary Surgeon, Colne Division, St. John Ambulance Brigade.

John Perry, Honorary Serving Brother of the Order, Chief Superintendent, Northampton Corps, St. John Ambulance Brigade.

John George Stevenson, Private, Northampton Corps, St. John Ambulance Brigade.

Albert Edward Gordon Cox, Private, Northampton Corps, St. John Ambulance Brigade.

Thomas Daniel Higgens, Private, Northampton Corps, St. John Ambulance Brigade.

Clement Heathcote, Honorary Serving Brother of the Order, Superintendent, Winsford Division, St. John Ambulance Brigade.

SOUTH AFRICAN NOTES.

Civil Surgeon Ellenbogen is reported to be progressing favourably at Elandsfontein.

THE BACTERIOLOGY OF THE SWEEPINGS COLLECTED FROM ITALIAN MEN-OF-WAR.

The *Annali di Medicina Navale* for May last contains an

article with tables showing the result of a bacteriological investigation of the sweepings on board a number of war-vessels, the author being Dr. C. M. Belli, medical officer of the first class in the Italian navy. The total number of germs found varied considerably not only in different ships but also in different parts of the same ship. As might be expected, the dust collected in the passages was very prolific, but, strange to say, fewer micro-organisms were obtainable from the men's kitchens and latrines than from anywhere else. In the officers' quarters the mean number of gelatin-cultured germs was 283,000 per cubic centimetre, while in the kitchens it was 45,000 and in the latrines only 15,000. Finally, Dr. Belli contrasts the health of the navy with that of the army. During the 20 years ending 1894 the average losses per annum per 1000 of strength were as follows:—

—	Died per 1000.	Invalided per 1000.
Italian Navy	4·40	6·93
,, Army	9·62	14·01

"It would no doubt be a grave error," says Dr. Belli in conclusion, "to suppose that the greater foulness of the air in land barracks as compared with its purity in war vessels is the only, or indeed the principal, factor to be taken into consideration when treating of the superior sanitary condition of the navy. There are other and important co-efficients which cannot now be discussed. It nevertheless seems certain that the point in question is worthy of consideration."

VICHY WATER.

Dr. J. Carayon, who is in charge of the military hospital at Vichy, concludes a paper in the *Archives de Médecine et de Pharmacie Militaires* for June with the following list of diseases in which Vichy water may be regarded as (1) useful, (2) useless, and (3) hurtful. 1. Chronic paludism, palustral cachexia, dysentery (of hot climates), chronic articular rheumatism, visceral rheumatism, rheumatism complicated with Heberden's nodes (except in the acute stage), intractable gout, uric gravel, oxalic (phosphaturic) gravel, saccharine diabetes (constitutional, hepatic, nervous), anæmia (colonial), neurasthenia (when symptoms of dyspepsia are prominent), dyspepsia (especially of hepatic origin), dilatation of stomach, chronic diarrhœa (muco-membranous enteritis), congestion of liver, hypertrophy of liver, chronic hepatitis, atrophic and hypertrophic cirrhosis, catarrhal icterus, biliary lithiasis, hepatic colic, renal lithiasis, nephritic colic. 2. All rheumatic affections other than the chronic variety, wasting diabetes (so-called "pancreatic,") neurasthenia when unaccompanied by dyspeptic symptoms, lesions, anatomical or functional, consecutive to wounds. 3. All acute affections, all cachexias, save that due to paludism, pronounced senility, cancer (irrespectively of site), chronic diseases of the brain or of the spinal cord, chronic pulmonary affection, diseases of the heart and of the great vessels, constipation (in old people due to insufficiency of muscular coat), nephritis, stricture of the urethra and its complications, syphilis, recent or of long standing, accompanied by visceral lesions especially of the nervous centres.

MAGERSFONTEIN: A PSYCHOLOGICAL STUDY OF WAR.

Among the numerous articles which have been written in connexion with the late war in South Africa we may call attention to one in the *Fortnightly* for this month on the battle at Magersfontein because it treats of it from a new and interesting point of view. The article mainly deals with the effect of external conditions upon the man as distinct from the soldier and studies the psychological aspect at Magersfontein in order to emphasise a neglected factor in the equation. The writer describes the effects of the climatic heat, the severe thunderstorm, the extreme darkness of the night, and the other conditions that prevailed—all of which had a tendency towards lowering of the moral strength. He points out that, over and above the material presented on that occasion for the consideration of those who are re-organising the army, there remains the conviction that with the improvement of the weapon the man who holds it becomes more, and not less, a study. There was hardly a phase of possible war, he asserts, that was not illustrated in the two days' fight at Magersfontein which presented the most impressive lesson for the future that the Boer war has afforded.

THE RUMOURED RETIREMENT OF ARMY OFFICERS.

It will be interesting to notice whether any appreciable number of medical officers will retire from the service on their return to this country from South Africa now that the war is ended. It is believed that a considerable number of officers belonging to the combatant ranks of the army are, or will be, seeking their retirement—indeed, if we may credit current rumours, a big exodus is to take place. According to our service contemporary—the *Army and Navy Gazette*—the profession of arms has grown unpopular owing to the amount of adverse, and, as the officers think, unfair, criticism to which they have been subjected. There is no doubt that much of the criticism has been unreasonable and exaggerated, especially on the part of those who failed to realise the enormous difficulties of the war and who did not stop to ask themselves whether the army of any other country would have done as well or better in the circumstances.

THE WELSH HOSPITAL.

On August 14th Lord Penrhyn will unveil a memorial brass to the deceased members of the staff of the late Welsh Hospital in South Africa which is to be placed in St. David's Cathedral, and his lordship will also hand over the hospital flag to be permanently placed in the nave of the cathedral.

THE NAVAL HOSPITAL AT DARTMOUTH.

The Naval Hospital at Dartmouth will be ready for the cadets' occupation at the commencement of the September term. Fleet Surgeon A. W. May is to enter into occupation of his quarters immediately. It is estimated that the total cost of fitting up the hospital will be upwards of £6000.

MENTIONED IN DESPATCHES.

The full name of Civil Surgeon Ellis, who was brought to notice in Lord Kitchener's despatch of March 8th, 1901, published in the *London Gazette* of May 7th, 1901 (and in THE LANCET of May 11th, 1901), is as follows:—Civil Surgeon Alfred Pytches Blanchard Ellis.

DEATHS IN THE SERVICES.

Deputy Surgeon-General Robert Gillman Lord, I.M.S. (retired), at his residence, "Ambersgate," Chelston, Torquay, after a short illness, in his eighty-second year.

Correspondence.

"Audi alteram partem."

THE CAUSE OF INEQUALITY OF PUPILS IN CASES OF THORACIC ANEURYSM.

To the Editors of THE LANCET.

SIRS,—In the elaborate, and also no doubt important, paper by Dr. R. C. B. Wall and Dr. E. W. A. Walker in THE LANCET of July 12th, p. 68, there is a misconception of my published opinions as to the significance of disparity of the pupils as a sign of aneurysm which it may be as well to make note of at once, because in point of fact I have no real controversy with the authors as regards either the opinions or the experimental data which they have brought to bear upon the question. They attribute to me (p. 69) that I am "apparently convinced that inequality of the pupils associated with thoracic aneurysm is *in all cases* due to implication of the sympathetic," and they fortify this remark by a quotation which I will not give here, as it is quite clearly irrelevant, and I mean to show presently that, so far from being "apparently convinced" as above, I have never taught, or sought to teach, anything of the kind. The case which I published in 1854 was one of what we should now call "spinal myosis" (although the name was not at that time in use), the myosis being to a marked degree abnormal, permanent, and practically unvarying over a long period of observation, the opposite pupil being, moreover, mobile and normal in every respect. The coincidence of this condition with an aneurysm proved subsequently by post-mortem examination to have exerted permanent and destructive pressure on the lower sympathetic ganglion in the neck was a fact which had to be recorded and explained, and its great importance in respect of the diagnosis of aneurysm in this situation was not only manifest but was fully discussed in reference to all the information at that time available.

But the very importance of the diagnosis which might thus be supposed to emerge from a disparity of the pupils in aneurysm served to quicken my sense of the fallacies which might arise from physiological and other causes of disparity apart from aneurysm. So far from becoming "convinced that inequality of the pupils ..... is in all cases due to implication of the sympathetic," it was not long before I became convinced of exactly the converse proposition. Case after case of aneurysm was observed in detail with regard to the pupils, and it was not long before I became convinced that slight and variable degrees of disparity (which were far from being rare) were almost of no account in the diagnosis, it being a not unusual experience to have the larger of the two pupils on the aneurysmal side, and variations taking place in this respect in the same case at different times. The valuable and exhaustive memoir of my friend Dr. John Ogle was in this respect only unconvincing to me as it seemed to lay equal stress (or almost so) on dilatation and contraction of the pupil, the former being assumed to be (as in experiments) the result of irritation of the cilio-spinal nerves, the latter of pressure or destruction of them. It was difficult to disprove or to controvert the former mode of action from the theoretical point of view, and therefore I never attempted to do so; but as a matter of personal experience I have not succeeded in convincing myself that relative *dilatation* of the pupil is of any importance in the diagnosis of aneurysm; and *myosis* is only of importance when, as in my first case, it is manifest, permanent, and accompanied by such abnormalities of reaction as are referred to in detail in the article in Vol. VI. of Clifford Allbutt's "System of Medicine," p. 400 *et seq.* If Dr. Wall and Dr. Walker will do me the favour to read carefully the cautionary statements in p. 404, or the summary of my experience in p. 406, they will, I think, entirely acquit me of having yielded to any such prejudice as they attribute to me. It would be easy to make this clearer by quoting more in detail, but as the work in question is very accessible to almost all your readers I forbear from burdening your space.

I am, Sirs, yours faithfully,

Edinburgh, July 15th, 1902. W. T. GAIRDNER.

CIDER AND GOUT.

To the Editors of THE LANCET.

SIRS,—Should the gouty drink cider? This is a question often put to medical men. The opinion of the authorities appears rather conflicting. I myself have prescribed cider in cases of atonic gout with great benefit. I am sure that you would do a great service to us if you would let us have the benefit of your opinion on the subject.

I am, Sirs, yours faithfully,

THOMAS DOBSON, M.D. St. And.

Windermere, July 9th, 1902.

DIPHTHERIA AND ITS TREATMENT AT COLCHESTER.

To the Editors of THE LANCET.

SIRS,—As a year has now fully elapsed since the beginning of the epidemic of diphtheria in the borough of Colchester it may be advantageous to review this *annus mirabilis* so far as the disease in this locality is concerned in regard to its rise, progress, and decline, with any other circumstances of interest affecting it during the year. Commencing in the first week of May, 1901, it has continued to the present time and no intermediate month has been free from its presence. The number of notifications from the beginning of the year 1901 to its close was 287 and 43 were notified up to the end of May of that year, whilst 77 have been returned for the same period of this year, being 18 for January, February, March, and April, and 25 for May, 1901; and for this year, for January, February, March, and April, 62, and for May, 15, and only four for June, showing that the disease is now passing away. Like all epidemics it was small in amount, sporadic, and of a comparatively benign character at its beginning, but speedily showed a sudden large increase, virulent in type and located in well-defined special localities, in May and June, afterwards assuming in July and subsequent months a less virulent form though the numbers did not lessen till November and December.

23 deaths occurred in May, June, and July out of a total of 137 notifications for that period in the borough; 111 patients were removed to the Infectious Hospital during these three months and 26 were treated at their own homes—66 had antitoxin administered with 17 deaths, 45 were treated without antitoxin with three deaths, and 26 outside the Infectious Hospital, also with three deaths. Three of these deaths which occurred without antitoxin being used had the disease in a hopeless hæmorrhagic form on entering the hospital and others from organic disease either from the rapidity of the course of the malady or not being removed to the hospital soon enough for any remedy to restore the vital powers or to save life, and if antitoxin had been used in such cases it would only have increased the death-roll of those who died after receiving that remedy. The total number of cases notified during the diphtheritic year commencing in May, 1901, and ending on April 30th, 1902, is 331—271 being notified from May to December, 1901, and 62 from January to April 30th, 1902, the deaths for the eight months in 1901 being 34 and those of the four months of 1902 eight, giving a total of 42 and a death-rate of 12·69 for the entire period.

There is probably no disease, taking it in all its phases, requiring more discrimination in its diagnosis or discretion in its treatment than this, the diseases affecting the throat being very numerous and difficult to differentiate, especially in their first stage—the time most important, especially in diphtheria, in securing the best chance of success in preventing a fatal result and a long convalescence. It seems also only natural that diphtheria should be at once attacked at its point of origin and the system of cure which ignores this fact is not based on true physiological principles. Remove the cause and the effect ceases, and this can easily be done at the onset and the result is everything that can be desired in a speedy removal of the dangerous poison and a short convalescence. The *cilia* or brushing apparatus with which the mucous membrane of the throat and back part of the mouth is lined are soon clogged with dead matter and bacteria and their action arrested, thereby furnishing a fitting nest for the hatching of the toxins which enter the system and which give rise to all the evil consequences of the disease. The first line of attack is therefore to be put in force at once by clearing the throat of these lethal products and enabling these minute organs free play in resuming their natural function of keeping the throat clean. So essential are these minute organs in the animal economy and their vitality is so great that they continue in action after removal from the throat and even for three or four days after death do not lose their power of movement. It is therefore a most important point in the treatment of the disease to restore their function at the soonest possible time and thus allow a means of exit to their imprisoned poisons. This means of cure also lessens the chance of infection being conveyed to others, for whilst only one case of infection occurred during the 17 years previously to 1901 at the infectious hospital, seven nurses and one ward attendant were attacked by the malady during the present epidemic and the antitoxin treatment does not prevent the disease spreading to others after the patient is said to be cured.

It appears derogatory to the science and practice of medicine and surgery that it should be imperative as some practitioners hold that there should be only one system of cure to a specific form of disease, that there should be no progress in the healing art, and that the most ignorant and the most experienced should be bound by a hard-and-fast rule to pursue a course of treatment which frequently entails more misery on the sufferer than the original disease itself could produce. There are many mild cases of diphtheria—indeed, the majority are such—that require little treatment and some that defy all human skill, as there are cases of malignant scarlet fever and like diseases that exhibit the same tendency and are extremely fatal in the young. After July 2nd, 1901, the disease was generally of a mild form and 26 cases were admitted into the hospital from that date without a single death up to the 19th and since then only occasional cases of a virulent character occurred, the cases both inside and outside the hospital being of the same description. It is a well-known law in medical science that if one disease is already in the system another as a rule is denied admittance, or if introduced its action is greatly modified or suspended till the first has run its course. Cases of scarlet fever occurred in this way and in many cases were fatal after the diphtheria.

On the other hand, some children were admitted with diphtheria and in two or three days after admission chicken-pox made its appearance and though one of them had a very

bad throat all recovered. Dr. Jenner 100 years ago was cognisant of this fact and it is interesting to find in his biography that he was foiled in his attempt to vaccinate some patients in Colchester owing to this law. His biographer relates that "on the 15th of April, 1800, His Royal Highness the Duke of York sent a message to Dr. Jenner to request him to go to Colchester to vaccinate the 85th Regiment. He was under the necessity of waiting a considerable time before he could communicate the disease to anyone. He found the whole of the regiment, together with the women and children, labouring under the itch. He commenced his inoculations but they all proved unsuccessful. On the 2nd of May he found that one child had taken the cow-pox and he adds that all the men are cured of the itch and in two days will be washed and fit for vaccination. These anticipations proved rather premature, for he observed on the 13th of May that he could not succeed in communicating the true cow-pox to those whose constitutions had been under the influence of the itch." His biographer states: "It appears to me of moment to allude to these assurances, because they afford very convincing proofs of the truth of a doctrine which Jenner subsequently adopted and invariably maintained to the last hour of his life—namely, that any cutaneous disease, however slight in appearance, was capable of interfering with the regular course of cow-pox and from preventing it from exercising its full protecting influence. Though Dr. Jenner could not himself undertake to vaccinate the regiment at Colchester he went twice to that place to inspect the progress of the practice." It would be of immense value to mankind if such a remedy were found to give immunity from diphtheria and the same course could be pursued and with the same certainty of success as vaccination gives in small-pox. Antitoxin is said to give immunity for three weeks, just as we may surmise that any other disease, such as chicken-pox, might have the same effect. As a prophylactic the remedy of antitoxin in mild cases is often worse than the disease and even as an adjunct to the topical treatment in producing tetanus, severe urticaria, and other serious maladies it cannot be pronounced as altogether safe. Surely the resources of the human mind have not yet arrived at that state of sterility to preclude the idea of such a remedy being discovered in our own age, and it is even possible that another Jenner may arise to find out a safe, speedy, and pleasant cure for this dreaded disease in anticipating its coming and neutralising its effects and lessening its mortality.

The disease followed the usual course of an ordinary epidemic, and though a bacteriological office was instituted in September and it was stated that the disease would be extirpated in six weeks yet it did not have any marked decline till last month. An isolation home was also inaugurated and patients who had been treated with antitoxin in the infectious hospital, but whose throats were still infected with bacteria, were placed there till their throats were free from these germs. These modes of checking the disease have been an enormous expense to the borough and cannot be considered of a therapeutic value equal to what has been claimed for them or the results have shown. The copious showers which have fallen during the past three months have been the chief cause of the decline of the disease and have been far more potent in their effects in checking it than any number of artificial schemes instituted for its suppression. The science and art of surgery have no doubt advanced greatly during the latter half of last century and its boundaries have been greatly extended by the painstaking and elaborate schemes pursued in investigating the secret causes which produce and influence disease, yet the rapid progress may tempt some to cling to a theory which more extended inquiry and research may prove to be fallacious, and thus they lead them to worship an *idolum specus* as a true divinity. Antitoxin has in this way been held up as a therapeutical save-all. It is needless to say that its use given indiscriminately traverses Jenner's great law that the protective principle must be introduced into the system before the disease for which it is used breaks out.

Though, then, great advances have been made in the profession, yet it does not appear that the ordinary life of the professional medical man has much improved. In Pearson's "Life of Hey," who practised 100 years ago, the author throws some light on the way the world went at that time. He says "that there are scarcely any opinions or modes of treatment that do not lie open to censure and animadversion, no method of managing a disease of which it may not be pronounced if unsuccessful: 'Had this been done or that left undone the issue would have been more fortunate.' Hence a man disposed to detract from the merit, to disparage the qualifications of his professional brethren, to impute mistake or incompetence to them, may easily find specious pretences for arraigning their conduct and a willing audience to listen to his ignorant, interested, or malicious insinuations." Civilisation, it is said, advances in a circle and it may be that the moral powers lag in the race in contrast with the intellectual.

I am, Sirs, yours faithfully,

Colchester, July 1st, 1902. GEORGE BROWN, M.D. Glasg.

PERITYPHLITIS.

To the Editors of THE LANCET.

SIRS,—Educated at Guy's Hospital before 1886 and familiar from my student days with the starting-point of perityphlitis, it has seemed to me that one meets with more cases in the post-mortem room since operative treatment has become so common. The few fatal cases seen by so careful an observer as Sir William Gairdner in the days before the disease was considered to be mainly surgical supports this view. By making such a suggestion one does not intend to reflect upon the value of surgery in perityphlitis, but the dogmas of surgery must be the result of experience, and in gaining experience it sometimes happens that the few have to suffer for the many. Removal of the appendix in the quiescent stage is obviously a simple matter in the hands of an able surgeon like Sir Frederick Treves, but too often probably an operation in the acute stage, as suggested by Hilton Fagge, who had "twice seen an exploratory operation performed in suppurative peritonitis starting from ulceration of the vermiform appendix,"[1] may remove "the last chance of life," especially when the peritonitis is not general and adhesions are commencing to localise the inflammation. If surgery only for a short period in the past increased the fatality of perityphlitis one can understand how the increased opportunities thus afforded for study may have appeared almost to have led to the discovery of a new disease.

It may be added that some surgeons, at least at Guy's Hospital, were familiar before 1886 with the morbid anatomy of perityphlitis. I remember a clinical lecture given by Sir H. Greenway Howse upon perityphlitis two or three years before that date in which the origin of the trouble in the appendix was mentioned and the rarity of foreign bodies emphasised. The lecturer told us how when staying in a cherry-growing district in France, where the abundant swallowing of cherry-stones was seen by their number in the fæces of peasants which were left in the fields, he had been unable to find any indication that this habit of swallowing the stones led to perityphlitis being more common there than elsewhere.

I am, Sirs, yours faithfully,

Clifton, Bristol, July 12th, 1902. THEODORE FISHER.

To the Editors of THE LANCET.

SIRS,—I hardly think that it is worth while writing and complaining about Sir Frederick Treves describing the above as a new or recent disease, for by reading his lecture closely one discovers that he gives a long history to it. Perhaps on the whole Guy's men have been more alive to the important part which the appendix has played in the disease than men of other schools on account of the teaching of Addison, Wilks, and Fagge. What, I take, Sir Frederick Treves seeks to bring out in his lecture is that surgically it is a new disease, or rather that modern surgery has given a new and practical importance to it. This, I think, is no doubt true. I was at Guy's Hospital some 25 years ago and during my stay there of six years I never saw a case of appendicitis operated upon, although, I believe, very soon indeed after my leaving Mr. Charters Symonds operated successfully upon a case under the care of the late Dr. Mahomed.

What is important to remember still is, as Sir Frederick Treves insists upon, that the vast majority of cases recover; and again, as Sir W. R. Gowers points out, the severest attack is commonly the curative one. Personally I have had two attacks; to describe them would take up too much

[1] Principles and Practice of Medicine, first edition, vol. ii., p. 212.

of your space. But let it suffice that in both, I believe, many surgeons would have operated on both occasions. There is no disease about which it is so necessary to possess medical and surgical knowledge as the above; it is essentially one in which the physician and surgeon should meet, and it is often most difficult to decide which plays the more important part. I am, Sirs, your faithfully,

Folkestone. W. J. TYSON.

To the Editors of THE LANCET.

SIRS,—The correspondence on perityphlitis which has been going on in THE LANCET is one of very great importance to general practitioners. These cases present the greatest difficulty to us in dealing with them. The question which always presents itself to us is, What is the right thing to be done in the particular case before us and is it advisable to have recourse to surgical interference? Unfortunately though surgeons seem to think that this disease belongs exclusively to their domain, yet they are by no means united amongst themselves as to how to deal with it. I was speaking some months ago to a well-known surgeon attached to one of our largest hospitals in London on the treatment of this disease, and he was very dogmatic on the point that all cases as soon as they were diagnosed to be appendicitis should be operated upon immediately. Now, however this may be in theory it does not work out in actual practice, for we see often cases presenting alarming symptoms which yet get well under ordinary medical treatment. There are times, however, when we are compelled to ask ourselves whether the case might not have been saved by operation. On the other hand, I have had occasion to wonder whether the patient might not have lived if he had not been operated upon. On reading the Cavendish Lecture by Sir Frederick Treves one cannot help admiring the wide and comprehensive view he takes on the question of the surgical treatment of appendicitis, and though he lays down certain general rules as to treatment, yet, nevertheless, the result to the patient must depend on the intelligence and acumen of the medical man in attendance in advising the line of treatment to be adopted. One word more. Just as there are differences of opinion among surgeons on the treatment of this disease, so also among physicians we find the same diversity. One will advise salines and purges, another opium and enemata, while a third class object to drugs of any kind, but put their faith in local applications. It would be well, I think, therefore, if physicians, instead of recording the antiquity of the disease, would enlighten us as to the mode of treatment they have found most successful.

I am, Sirs, yours faithfully,

HERBERT H. HORDEN, M.D. Lond.

Water-lane, Brixton, S.W., July 15th, 1902.

OBSERVATIONS ON DIET.

To the Editors of THE LANCET.

SIRS,—Dr. Harry Campbell's very clear and practical answer to Dr. Forbes Ross's letter really includes any answer to the strictures passed on my communication in Dr. Forbes Ross's letter in THE LANCET of July 12th (p. 110), so that I will not ask for space to deny the interpretation placed upon "spare diet" by him. I may, however, point out (doubtless by a printer's error) that I am made to have 30 years' experience, whereas in my letter I wrote 20 years. I have only been qualified 24 years, which makes me anxious at once to point out the mistake. I am, Sirs, yours faithfully,

Manchester-square, W., July 13th, 1902. THOMAS DUTTON.

"THE ELEMENTS OF MIND."

To the Editors of THE LANCET.

SIRS,—Your reviewer, after enumerating my claim to having made discoveries with regard to mind, life, the deity, and the atomic theory, says the study of such books "is weariness of the flesh. It is also entirely unprofitable." Why unprofitable? Is not the knowledge of the composition of life a thing worth striving after? And would not a medical man be in a better position to cure the ills of life if he were better acquainted with what life really is? The question is: Are my hypotheses with regard to the phenomena above mentioned sound? That I have produced both a definite and a new theory is accepted by all those—and there are many highly qualified to judge—who have studied my book sufficiently to grasp its meaning.

I am, Sirs, yours faithfully,

Radnor-place, W., July 14th, 1902. H. JAMYN BROOKS.

HORSE-DUNG IN LONDON STREETS.

To the Editors of THE LANCET.

SIRS,—In your issue of to-day one of your annotations deals with the question of horse-dung in London streets, and as a remedy you propose "some light form of mechanical scavenger." This undoubtedly would be of use. But surely the essential principle of sanitation must be prevention rather than cure, and in this instance the possibility of prevention has recently arisen in the legalisation and steadily increasing use of motor cars. The horse, like the privy-midden, is a nuisance, and the ideal before the medical profession for the alleviation of this nuisance, as well as before the public for the improvement of their traffic, is that by degrees the horse should be entirely ousted from the larger towns and his place taken by steam, oil, and electricity. I trust that the medical profession and the medical press will do all that is in their power to promote this object, and bodies like the Betterment of London Association, whose aims have been just laid before your readers by its president, Sir W. B. Richmond, as well as the statutory sanitary authorities, should lay this object down as one of the most useful and practicable of their propaganda. By removal of all obstacles to the use of motors, by stimulation of mechanical research and of the practical industry concerned in the development of motor cars, and by a system of licensing and heavy taxation of all horses employed in large towns this ideal is within our reach. The horse is no longer a necessity; to its owner he is a luxury; and to the public he is a nuisance.—I am, Sirs, yours faithfully,

FRANCIS E. FREMANTLE, M.B. Oxon.,
M.R.C.P. Lond.,
Medical Officer of Health for the County of Hertford.

St. Bartholomew's Hospital, E.C., July 11th, 1902.

THE LOCALLY ENGAGED CIVIL SURGEONS AND THE SOUTH AFRICAN WAR.

To the Editors of THE LANCET.

SIRS,—May I venture to give publicity through your columns to what is felt as a grievance by the pretty considerable number of "locally engaged civil surgeons" who have served during the war, some of them from the very commencement? The grievance is that they have been entirely passed over in the successive distributions of honours. R.A.M.C., of course, have had their share. Medical officers in the irregular and volunteer corps have not been forgotten. English civil surgeons have been honoured in the person of at least one of their number. The consulting surgeons, quite rightly, have received high distinctions. Not a single decoration has been given to one of the "locally engaged" class. Now these men have, in most instances, been doing exactly the same work as the irregulars and the English civil surgeons, at the same pay as the latter, at less than most of the former. Many of them, at the call of patriotism, abandoned good practices when the authorities were at their wits' end to get men in the dark days of the beginning of the war. Why should the fact that of two South African practitioners, one becoming a surgeon-captain in an irregular corps or the C.M.S.C. and the other taking up exactly the same work without stars or rank, make such a difference? A single C.M.G. given to one of their number would do much to allay the feeling that a deserving class of men have been badly treated.

I am, Sirs, yours faithfully,

Capetown, June 24th, 1902. EX-CIVIL SURGEON.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

The Rebuilding of the Infirmary.

A MEETING of the Manchester corporation special committee *re* the Royal Infirmary was held on July 7th, when it was by no means unanimous in its approval of the project for rebuilding on the present site. There was a long discussion, but no resolution was arrived at as it was considered undesirable that the corporation should take any action before the meeting of the trustees. Letters also appear in the papers criticising the scheme as to various points, such as the

noise of the greatly increasing traffic, the vitiated atmosphere, and the encroachment on the open space round the building. It is by no means certain that the trustees will approve of rebuilding in Piccadilly. One suggestion is that the corporation should sell the Art Gallery and Free Library and purchase the infirmary site. This, however, is not a new one. Perhaps the only new one is that the infirmary should be removed to Heaton Park, but the distance renders this preposterous. Among many there is a leaning to the Stanley-grove site, probably the best available. It would be free from many of the obvious objections to the Piccadilly site and would not be too far from the centre of the city.

Small-pox at Nantwich Hospital.

Our national slackness as regards vaccination is continually being followed by its natural consequences. Two cases of small-pox have occurred at Nantwich workhouse and on the second case being removed from the workhouse hospital to the urban council's temporary hospital at Ravensmoor a letter was sent to the board of guardians by the clerk to the council pointing out that the man was conveyed thither without the authority of the urban council and that though the council wished to assist the guardians as far as they could the accommodation was very limited and they would not be able to take any more patients. On this being read at the meeting of the guardians one of the members made the rather serious statement that "the two patients were housed in two insanitary houses which were dilapidated to an unfortunate degree, and life for the unfortunate nurses in charge of the place was hardly bearable." Dr. J. D. R. Munro, the medical officer of health, said that the first patient was removed to Ravensmoor by arrangement with the urban council and he thought the best thing was done when the second patient was taken there. He asked the guardians what provision they intended to make in the event of a further outbreak. After considerable discussion the medical officer and the master were empowered to make provision and were directed to apply to the urban council for permission to erect a tent on land adjoining the hospital at Ravensmoor, and the clerk was instructed to call a special meeting to consider the matter further. At a meeting of the urban council held on July 11th the statements as to the insanitary state of the temporary hospital were contradicted by Dr. Munro who said that the premises were sweet and clean and sufficient up to the present, while the surroundings were quite healthy. The nurses had complained of the presence of mice and a few rats had been seen, but they had not complained of the condition of the premises. All this illustrates the old adage as to one story being good till the other version is told. It looks as if a little common sense and the presence of a good cat would soon improve matters. With the strong evidence of the distance to which the infection can be carried the difficulties of providing accommodation for cases of small-pox without endangering the people in the neighbourhood are greatly increased. The proposal to establish a small-pox hospital meets with the strongest local opposition, naturally enough, but it may happily, perhaps, give the inhabitants a strong inducement to welcome vaccination and revaccination. The prevalence of this disease is a national humiliation, from which we should be freed in spite of the clamour of the small minority of sincere but ignorant fanatics.

A Lady Sanitary Inspector at Hyde.

At the meeting of the Hyde Council, held yesterday, two additional sanitary inspectors were appointed, one of them being a woman. The chairman of the sanitary committee said that the female inspector would devote most of her time to the endeavour by various means to lessen the infant mortality of the borough, which in recent years has been very high. Judging by the good work done by the "health women" employed under the supervision of Dr. J. Niven in Manchester, this is a step to be strongly commended. The ignorance of the young mothers of the working class and the mill hands of our cotton towns as to the treatment of infants is something almost incredible and can be dealt with far more successfully by a sympathetic and intelligent woman than by a man.

Railway Servants' Ambulance Instruction.

Ambulance work is popular among the railway servants of Manchester, classes having been organised at many of the local railway centres, one recently formed being in connexion with the Great Central Company at Ardwick Station. A course of lectures and experimental teaching have been given by Mr. R. H. Wright of Ardwick and 24 members of the class recently presented themselves for examination, all being successful.

July 15th.

WALES AND WESTERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENTS.)

Small-pox.

THE epidemic of small-pox at Swansea is assuming alarming proportions, 43 cases having been notified during the week ending July 12th, on which date there were 51 patients under treatment in the small-pox hospital. The population of Swansea is under 100,000. The medical officer of health (Mr. Ebenezer Davies) appears to be of opinion that there is some connexion between the sudden increase in the number of cases and the crowding of the town at the time of the carnival which was held in Coronation week. This view is probably correct, but there can be no doubt also that the health department of the corporation has been considerably handicapped by the evident desire of some persons in the town to minimise the serious character of the epidemic. Although such action was probably well intentioned it possibly had the effect of lessening the number of persons who sought revaccination as well as of engendering among the inhabitants a spirit of indifference towards the disease. Mr. Davies has suggested that the board of guardians should approach the employers of labour with a view to having their workpeople revaccinated and the board has decided in addition to open more vaccination stations, though it is to be regretted that the public vaccinators are to be asked to accept reduced fees. Although up to the present time the accommodation at the small-pox hospital has proved to be adequate to the needs of the outbreak it is probable that it will soon be overtaxed even with the additional temporary block which it is proposed to erect at once. For many years the corporation has been urged to erect a permanent isolation hospital, but from mistaken motives of economy it has neglected to do so and is now suffering for that neglect. The county assize is held alternately at Cardiff and at Swansea, and the next assize should commence at Swansea on July 28th, but Mr. Justice Ridley, after obtaining information from the under-sheriff, communicated the circumstances to the Lord Chancellor with the result that it has been decided to hold the assize at Cardiff. On July 8th a case of small-pox was discovered at Bridgend, the patient being a showman who had been in Swansea up to June 23rd, and on the following day a second case was reported, the patient in this instance having recently visited Swansea. Both men were removed to the small-pox hospital. At Brecon there have been during the past month eight cases of small-pox, one of which has terminated fatally. All the patients were treated in the small-pox hospital. There has been one case of small-pox at Pontardulais, near Swansea; the patient, a tin-worker, was removed to the Neath small-pox hospital on July 13th. The volunteers from Brecon and from Swansea will not go into camp on Salisbury Plain owing to the presence of small-pox in their districts.

Insanity in Glamorganshire.

The two county asylums at Bridgend have accommodation for 1700 patients and serve the whole of Glamorganshire, where there was a population in 1901 of 860,800 persons. In the year 1898 the corporation of Cardiff decided to build an asylum exclusively for Cardiff lunatics and plans have been prepared for an institution to accommodate 700 patients. The cost is estimated at £247,000, exclusive of the site, the boundary wall, and furnishing, a sum equal to £353 per bed, but the administrative accommodation is sufficient for an additional 500 patients. This asylum is expected to be completed by the end of March, 1904, until which date the corporation has the right to send 430 patients to the county asylums. In the report for 1901 of Dr. Henry T. Pringle, the medical superintendent of the county asylums, he states that the proportion of pauper lunatics in Glamorganshire has increased from 189 per 100,000 of the population in 1891 to 318 per 100,000 in 1901. In the whole of England and Wales the increase in the same period was from 268 to 302 per 100,000. There are eight Poor-law unions in the county, and in two only, Merthyr and Pontardawe, has there been any decrease in the proportionate amount of lunacy

during the 10 years. The cost of maintenance at the Bridgend asylums was 9s. 4d. per patient weekly, the recovery rate was 32·5 per cent. on the admissions, and the death-rate was 9·8 per cent. of the average number of patients resident during the year. Dr. Pringle deplores the fact that one-fourth of the cases admitted should be due to a preventable cause—intemperance in drink—and he considers that it is disappointing that education seems to do so little towards the building up of character or the promotion of self-control.

Death of Mr. Patrick Alexander Kelly, L.R.C.P. Edin., L.R.C.S. Irel.

Mr. P. A. Kelly, whose death occurred at Barry on July 11th after only a few days' illness, was attached to the French ambulance service in the Franco-Prussian war of 1870. On the termination of the war he qualified in Dublin and in Edinburgh and subsequently practised in South Africa, where he was a justice of the peace. On returning to England he came to Barry in 1891, where he established a lucrative practice. He took a prominent part in local affairs and the regard in which he was held by his fellow practitioners is shown by their electing him as their representative on the hospital committee of the district council. He leaves a widow and six children.

Vaccination in the West of England.

At the meeting of the St. Austell (Cornwall) board of guardians held on July 11th it was reported that the charges recently made against two of the public vaccinators of the union had been fully investigated by a committee appointed for the purpose which had found that the charges made in reference to one of the gentlemen were so trivial that it was not necessary to take any action. In regard to the other official he had admitted various inaccuracies in the register whereby the claim of £57 was reduced to £47. These inaccuracies, he stated, were due to inadvertencies and carelessness, but the committee did not regard his explanation as satisfactory and recommended that he should be reprimanded and cautioned as to his future conduct as public vaccinator. A letter was read from the public vaccinator referred to, expressing deep regret, willingness to forego the whole of the past quarter's vaccination fees, and a desire to earn back the confidence of the board. The guardians after some discussion adopted the recommendation of the committee.

Dorchester and Sir Frederick Treves.

At the meeting of the Dorchester town council held on July 8th it was unanimously resolved that a vote of congratulation should be forwarded to Sir Frederick Treves on his elevation to the baronetage. Sir Frederick Treves is a native of Dorchester and was recently presented with the freedom of the borough. Mr. W. B. Cosens, who seconded the proposal, said that he had received a communication from Sir Frederick Treves stating that he had chosen to be known as "Sir Frederick Treves of Dorchester," an announcement which was received with great applause.

July 14th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Death of Mr. Joseph McNinch, M.D. R.U.I.

I REGRET to announce the death of Dr. Joseph McNinch, which took place at his residence, Larne, co. Antrim, on July 3rd, from acute pneumonia, after a very brief illness. A member of a well-known Larne family, where his ancestors had lived for several generations, Dr. McNinch studied at Queen's College, Belfast, and graduated as M.D. of the Royal University of Ireland in 1883. Returning to his birth-place he practised in Larne and enjoyed a large *clientèle* until a few years ago, when owing to failing health he was not able to do so much work. He was consulting medical officer of the urban district of Larne and his decease at a comparatively early age is a matter of deep regret. He was buried on July 5th at Kilwaughter Cemetery, near Larne. He leaves a widow and three children to mourn their loss.

Presentation to Dr. John Campbell.

On July 7th, in the Samaritan Hospital, Belfast, Dr. John Campbell, surgeon to that institution, was presented on the occasion of his marriage with a silver tea and coffee service by the committee, matron, and nurses of the Samaritan Hospital as a token of gratitude for his unfailing kindness and attention. Many members of the medical profession, on the invitation of the committee of the hospital, were present.

Anahilt Dispensary District.

Dr. David Clarke Campbell has been appointed medical officer of the Anahilt Dispensary district by the Lisburn board of guardians in place of the late Dr. W. Thomson.

Death of Mr. William Warwick, M.D. Aberd., M.R.C.S. Eng.

One of the oldest medical practitioners in Belfast, Dr. W. Warwick, died at his residence in that city on July 10th, at the advanced age of 76 years, surrounded by all the members of his family. Obtaining the M.R.C.S. Eng. in 1851 and the M.D. of King's College, Aberdeen, in 1860, Dr. Warwick was for over 50 years a medical practitioner in Belfast where he enjoyed an extensive practice. The deceased was most kindly and genial and of rather a retiring disposition, declining on several occasions invitations to join the City Corporation of Belfast and refusing the offer of the Commission of the Peace for the city. He leaves two sons and one daughter (married to Dr. E. C. Bigger, Local Government Board medical inspector) to mourn their loss.

July 15th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The New Maternity Hospital.

M. MOURIER, the director of the Assistance Publique contrived matters so that the new Maternity Hospital should be opened on June 28th which was the centenary of the School of Obstetrics. The new buildings have been erected under the superintendence of the architect of the new Academy of Medicine. The building consists of three blocks united by a large central gallery. The plan is that elaborated by Professor Budin in 1897. The first block is for new admissions, the second for women in labour, and the third for women during the puerperium. In the first block the new arrivals are put through a vigorous cleansing process and they are not allowed to pass out until the latest hygienic regulations have been duly attended to. In the second block is the lying-in ward, with 10 beds; it is of ample size and is beautifully lighted. Here at least 3600 cases of labour per annum will be taken in hand and here the pupil midwives will undergo the practical instruction which is the necessary complement of their theoretical training. Every pupil will in turn be on duty for 24 hours. All the appointments of the ward are in the latest fashion and there are facilities for sterilising instruments and a plentiful supply of sterilised water both hot and cold. The pupils will take their meals in the basement of this block, which is well lighted and airy, so that there may be no excuse for leaving their patients for any length of time. In this block, also, is a theatre for lectures and operations. In the third block are four large wards for women who have been confined, containing in all 72 beds. One ward with 16 beds is for patients requiring particular care and there are also one or two private rooms for patients who for one cause or another do not wish to be seen. The Tarnier ward for patients who have to be isolated has 10 beds only and is, together with its operating-theatre and nursing staff cut off from the rest of the building. The nurses have separate rooms which are comfortably furnished and so have the midwives. The buildings are lighted throughout by electricity and the cost is 800,000 francs.

The New Cochin Hospital.

On July 3rd two new medical blocks were opened at the Cochin Hospital. They are named after Claude Bernard and Potain respectively. These buildings are the commencement of the total reconstruction of the hospital, which will be carried through as soon as funds permit. A large portion of the present buildings consists of wooden erections which were provisionally put up at the time of the war of 1870. They did well enough on an emergency but as permanent buildings they were most unsuitable, the patients suffering extremes of heat and cold, to say nothing of the buildings being infested by rats and fleas. The patients will be moved into the new buildings as soon as possible. The

Claude Bernard block is made up of four wards well lighted and looking on to pretty gardens. Everything is constructed with a view to being easily kept clean. There is, moreover, an amusement ward in which the walls are hung with water-colours, while the games provided include draughts, lotto, and dominoes. In the ward superintendent's rooms are the poisons used—all kept in special bottles. The night stools for the patients are made of painted iron and have a moveable seat which can be easily cleaned. They are fitted with an attachment for a table at which the patient can eat or write in bed. Plates, forks, and spoons are made of aluminium, as also are the tumblers. These last-named were formerly of glass and the substitution of aluminium will effect a great saving, for an enormous number used to be broken every year. The arrangements for the disposal of dirty linen are excellent and there is a plentiful supply of hot water. The Potain block at present consists of only one ward intended for female patients. The cost of the Claude Bernard block was 400,000 francs, of which 40,000 were expended on the foundations.

The Clinical Chair of Syphilis and Dermatology.

The Council of the Faculty of Medicine, which has been asked to nominate a candidate for the Clinical Chair of Syphilis and Dermatology, vacant by the retirement of Professor Fournier, has decided, at a meeting of 36 members, by 17 to 16 votes, to send up the name of Dr. Gaucher. Dr. Gaucher, whose name has thus been submitted to the Minister concerned, is *agrégé en exercice* and physician to the St. Antoine Hospital. The 16 votes were given to M. Hallopeau who is *agrégé libre* and physician to the St. Louis Hospital. Three professors did not vote.

July 15th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

The Illness of King Edward VII.

THE news of the postponement of the coronation and of King Edward's illness was received in Berlin with great concern. The Berlin daily papers have published detailed telegraphic accounts of the case and discussed the probable course of the illness and effects of the operation. Sir Frederick Treves's lecture on appendicitis which was published in THE LANCET of June 28th was translated literally by two of the leading Berlin daily journals and paragraphs from THE LANCET and the *British Medical Journal* concerning the King's illness have been frequently quoted recently in the Berlin daily papers. Portraits and biographies of the King's medical attendants, especially of Sir Frederick Treves (who is invariably described as "Sir Treves") and of Lord Lister, were inserted in the illustrated papers and Lord Lister is generally referred to with great respect as the founder of modern surgery.

The Centralisation of Nursing.

The number of trained nurses has considerably increased lately. 30 years ago there were scarcely any trained nurses in Berlin apart from those employed in the hospitals. Nursing at home was mostly done by untrained people or by members of religious bodies, especially by the Sisters of St. Elizabeth, commonly called the Grey Sisters. Nursing at that time was, of course, an easy task, chiefly consisting in the administration of medicine and in the preparation of food. Nowadays, in the era of physical treatment, when hydro-therapeutic measures, massage, dietetic, and other cures are prevailing, nursing is an art and has become more and more the domain of a special profession—i.e., of the trained nurse. This class now includes a lot of people some of whom belong to the religious or other associations, some to institutions based on the coöperative system, and others who are quite independent. Notwithstanding the great number of nurses and male attendants it is often difficult to obtain the services of one, especially when the case is urgent and the help of a nurse is required at once. At times when influenza, scarlet fever, &c., prevail the family medical man may telephone to a dozen institutions without being able to procure a nurse. Especially is this the case where the institution has a good reputation, although nurses belonging to other institutions may still be disengaged. To avoid this inconvenience the editor of the *Deutsche Medicinische Wochenschrift*, Dr. Schwalbe, proposes to organise the nursing profession by instituting a central office where the public and medical men may be able to learn at any moment when nurses are temporarily unemployed. In the central office a register is to be kept where the names of all nurses, whether they belong to religious or other institutions or not, are to be booked. The managers or matrons of such institutions will have to inform the office every morning as to the number of nurses unemployed and to correct their statements by telephone at once when during the day a nurse has been called to a patient or has returned; any person desiring a nurse will then only have to apply to the central office. If a nurse of a certain corporation or a particular private nurse is required the office will then be able to say whether the desired nurse is available or which other nurse can be supplied. A good deal of time and trouble may be saved in this way. Dr. Schwalbe further indicates other advantages of the system—namely, that it will exercise some sort of control over the so-called "free" nurses who do not belong to any corporation. These nurses, as well as nearly all the male attendants, are not under the control of a matron or a managing board and therefore, though the majority are as respectable as the nurses of the corporations, they may include persons of a low moral or professional standard. Hitherto if such persons have neglected their duties or have behaved in an unfair way it has been very difficult to make this known to the public. When dismissed by one family they have had every chance of being employed by another on the next day, it having been very unlikely that in a big place like Berlin their misdeeds would become known. Henceforth when a patient has reason to complain of a "free" nurse he will only have to inform the central office and the nurse's name will then be removed from the register. Dr. Schwalbe further proposes that the central office for nurses shall be in connexion with the First Aid Society. This society, apart from its other undertakings, has instituted an office provided with a special telephonic system whereby the public may get information at any hour of the day or night as to the number of beds at disposal in all the hospitals of Berlin and its suburbs. As this office works perfectly well and is very popular the public will probably not hesitate to apply to it for nurses. The First Aid Society being under medical patronage, bribery and other unfair methods of the nurses to get employment will be prevented. The managing board of the First Aid Society is said to agree with Dr. Schwalbe's proposals. Berlin will thus be the first town to establish a central organisation including every branch of nursing.

First Aid in Railway Accidents.

A remarkable improvement of the accident service in the Prussian State railways has now taken place by order of the Minister of Public Works. Lately there have been several instances of railway disasters where medical aid and dressing material have not been available within a reasonable time owing to the delay in providing the necessary material and conveying it to the place of the accident. The medical men residing in the neighbourhood of the accident could thus not do very much for the immediate relief of the wounded, especially when the accident happened at some distance from a station or town whence the necessary material could be obtained. The new regulations regarding railway accidents on the State railways (which include nearly 90 per cent. of the railways in general) order that in 77 stations wagons must be kept ready which are specially furnished with everything necessary for the relief of a large number of injured people. A model wagon was lately shown to a meeting of railway officials and medical men. According to a description by Dr. Brähmer, one of the medical officers of the State railways, published by the *Aerztliche Sachverständigen-Zeitung*, the wagons consist of two compartments separated from each other by a wooden partition. The first room is intended for dressings and urgent operations, the other for the accommodation of the injured. The wagon is provided with apparatus for hot water, heating, and ventilation, and is lighted by acetylene gas. In the dressing-room there are an operating-table 1·70 metres long and 0·70 broad, a washstand for the medical men, cabinets for instruments and dressing material, an ice-safe, a steriliser, and other apparatus. The instruments include, of course, only those necessary for first aid and very urgent operations and not those for amputations and most major operations, as it has been proved by careful inquiry that a well-furnished hospital may

be reached from any railway station within from an hour to one and a half hours. The second room of the carriage contains eight stretchers for those seriously wounded and four chairs for the slightly hurt, besides a number of woollen covers, so that at least 12 disabled people may be conveyed by the wagon. The medical officers of the railways are instructed to supervise the wagons, to keep the instruments and other appliances in good order, and in case of need to see to their renewal. In the stations where the wagons are kept a number of railway servants are to be trained in first aid, and they will have to accompany the wagons when they are required, together with the railway medical officer on duty.

July 14th.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

A Naval Medical School.

A SCHOOL for naval medical officers is contemplated by Surgeon-General Rixey and is to be planned after the Army Medical School founded in 1893; the school will be established at the Naval Museum of Hygiene in Washington, D.C. Heretofore young medical officers of the navy have received a short course of instruction in special subjects at the Naval Hospital in Brooklyn, but this is not felt to fill the need, and the new course contemplated will be pursued on a much broader basis; the new school is expected to commence its course in the fall. The plan covers two branches of work including two classes of naval officers; first, the newly-appointed medical officers of the navy will here secure instruction in the proper performance of their duties; and second, medical officers of longer service will here refresh their knowledge of special branches and fit themselves for examinations upon their return from a tour of sea duty. The surgeon-general's plan also includes the establishment of a school, probably at the navy yard at Norfolk, Va., where instruction will be given to the enlisted men in the medical department of the navy. Much time and thought have been given to these questions by a special board of medical officers who have secured information on this subject and prepared plans for the proposed institution; the model for this school is the Army School for Hospital Corps Men at Washington Barracks, D.C.

Bacteriological Laboratory of the United States Marine Hospital Service.

Preparations are in progress for the erection of a bacteriological laboratory in Washington, D.C., under the control of the Marine Hospital Service. By an Act of Congress $35,000 have been appropriated for this purpose, together with five acres of ground, being a part of the reservation now occupied by the Naval Museum of Hygiene, which will be the site. Heretofore experimental research has been carried on with much difficulty on the top floor of the building devoted to the administration of the Marine Hospital Service; all this work will be done in the future in the new laboratory. Very wisely, the plans for the building are so drawn as to provide for future expansion, and the appropriation just made will be used for the erection of a part only of the proposed building. In view of the probable expansion of its powers into a national bureau of public health, laboratory facilities such as are planned will be quite necessary to carry on properly the work of the Marine Hospital Service.

Results of Compulsory Vaccination in Porto Rico.

Dr. Axel Ames, commanding the United States Vaccine Corps and director of the Vaccination Department, Porto Rico, has made an interesting report on the results of vaccination in that island. In October, 1898, small-pox was endemic in Porto Rico; in December it was epidemic; in January, 1899, it had "honeycombed" the island; by February there were over 3000 recent cases and the disease was spreading at a gallop. In February systematic compulsory vaccination, carefully and scientifically conducted and recorded, was begun simultaneously and with pretty equal efficiency in all parts of the island. It was vigorously prosecuted for four months only, till July 1st, when 860,000 vaccinations had been made in a population of about 960,000. Of this number 87·5 per cent. were successful. The work then ceased because completed; the disease had practically disappeared; the fuel for it to feed upon had been consumed by the "head-fire" of vaccination. In the two and a half years that have since passed, instead of the former annual average death-rate of 621, the mortality from small-pox has been but two per annum in a population of nearly a million. Summing up his experience Dr. Ames notes that the very remarkable and carefully-recorded experiment determined conclusively several basic facts as to vaccine-lymph and its use—viz.: First, that vaccine lymph, especially when glycerinated and in tubes, will not retain its efficacy when exposed, even very briefly and without great variation of temperature, to change from a temperate to a tropical climate. Though the reason does not appear the fact cannot be disputed and all countries in the tropical zone should produce their own virus, if so fortunate as to start a "stock." Second, that given virile initial lymph and good cattle the very best of lymph can be produced by practically the same methods in the tropics as in colder countries, provided care is taken to protect it as soon as taken and until used from alternations of temperature. Third, that the glycerinated virus has nothing to recommend it for tropical use, if it has anywhere, and that glass tubes are worse than useless. Fourth, that a good, carefully kept virus has in the tropics equal if not greater activity and efficacy than that in northern latitudes, though it ought not to be kept as long. Fifth, that it is much better in hot countries especially to confine the vaccination upon animals for virus to a definite number (say 20) of abrasions on each side rather than to make linear incisions and secure thereby many lines of vesicles. In the first place the specific fever created is too great and is most undesirable, while the ravages of the screw worm, if it effects a lodgment in such extensive incisions, are difficult to manage. Sixth, that in field work nothing is so good with which to vaccinate an animal as the ivory point, the tube being useless, and nothing is so good with which to take virus. Surely nothing is so serviceable for the vaccination of the people or practicable in a hot country. Seventh, there is every warrant for positively asserting that although syphilis, tuberculosis, elephantiasis, and tetanus are common in Porto Rico, in no case has it followed that any of them, or any other disease, bovine or human, was imparted to an individual by the process of vaccination. With tetanus so common in the island that 818 cases occurred in seven months of 1900–1901, a single case only (in an infant) occurred after vaccination in 860,000 vaccinations and this, of course, would have occurred as readily with any abrasion.

July 7th.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

The Plague.

THE bubonic plague seems to be on the wane. In Sydney the authorities are hopeful that the epidemic is practically stamped out. No case has been reported for over a fortnight from fresh areas, but a few have occurred in infected ones. The health officer of the city of Sydney, Dr. W. G. Armstrong, reported to the health committee early in the month that the cleansing operations were nearly completed, the disinfected portions constituting a broad belt running through the city from north to south and including all the parts which have been shown by the occurrence of plague, either among human beings or rats, to be infected. Dr. Armstrong advised that the number of men employed in cleansing operations might be reduced and a few gangs retained to deal with isolated areas. Rat-catching is to be carried on and inspection and prosecution of householders and property owners for sanitary shortcomings will be continued, in spite of protests by citizens as to the summary methods employed. In Brisbane conditions are not so satisfactory. Fresh cases continue to be reported, though not to the same extent. Among the victims were the Government medical officer, Mr. C. J. H. Wray, and Dr. MacLean, resident medical officer, Brisbane Hospital. Mr. Wray it is supposed contracted the disease through making a post-mortem examination of a plague patient. Unfortunately, his case proved very severe and ultimately fatal. Dr. MacLean caught the disease from examining a patient who died from plague at the hospital gates. He has recovered from the attack and is convalescent. Up to date 136 cases of plague with 36 deaths have occurred in New South Wales, and 77 cases with 23 deaths in Queensland. In Western Australia several cases have occurred at Fremantle with two deaths. Melbourne and Adelaide remain free.

Friendly Societies in New South Wales.

A special meeting of the Friendly Societies' Association of New South Wales was held early in June to consider a letter from the New South Wales Branch of the British Medical Association *re* a conference between the two associations. The letter declined a conference as useless, the British Medical Association considering that the Australian Natives' Association was not a legitimate friendly society. It was then moved that—

The Australian Natives' Association be asked to retire from the Friendly Societies' Association, as their aims and objects are detrimental to this association.

After some discussion, in which several members expressed approval of the motion and said that the Australian Natives' Association were trying to enlist the support of working men for political purposes, the motion was ruled out of order as it had not been placed on the notice paper.—The forty-fifth session of the grand annual moveable committee of the Independent Order of Oddfellows, Manchester Unity, was held in Sydney at the beginning of May. The report of the delegates to the Friendly Societies' Association was read and a motion was submitted that "the Manchester Unity Association withdraw from the Friendly Societies' Association." Much discussion ensued chiefly with regard to the Australian Natives' Association and its dispute with the British Medical Association. Finally, the motion was lost. The following recommendation from the Inter-state conference of representatives of the Order was approved:

That it is desirable, wherever population in any centre will admit, to establish medical institutes and dispensaries, either alone or in combination with kindred societies, whereby medical men may be directly employed and medicines dispensed under the supervision of the societies.

It was thought that such action would overcome the difficulties with the British Medical Association. The President of the Friendly Societies' Association was also accorded a hearing. He said that one of the dangers ahead of the institution was the dispute between societies and the British Medical Association. As grand secretary of one lodge and president of the Friendly Societies' Association he was in receipt of frequent communications from secretaries of suburban and country lodges, to the effect that medical men in country towns were opposed to the admission of men who were in receipt of over £200 per year. He would like to point out that if the British Medical Association were to become masters of the situation, and they introduced the wage limit, it simply meant that the friendly societies would descend into working-men's benefit societies instead of representative institutions.—At the annual session of the grand council of the Protestant Alliance Friendly Society a lengthy discussion took place concerning the attendance of medical officers on members recuperating in the country. Cases occurred where a member was ordered into the country by a lodge medical officer in the metropolis, and then the medical officer of the local lodge in the country would refuse to attend him. No conclusion was reached on the general question, but in a specific case a motion was carried that a medical man at Newcastle be requested to put the name of a member of the metropolitan lodge on his list.—At the last meeting of the Balmain United Friendly Societies Dispensary Dr. Calder was appointed medical officer. A representative of the Australian Natives' Association was present and referred to the trouble with the British Medical Association. It was pointed out that other lodges kept faith with their medical men, the Australian Natives' Association did not. It was decided that an endeavour should be made to bring about a conference between the British Medical Association and the Australian Natives' Association. This dispensary has over 3000 members on its books.

A Hospital for Consumption for Sydney.

On May 16th a deputation of members of the medical profession waited upon the Treasurer of the State of New South Wales to urge the Government to take action in connexion with a hospital for consumption and especially to grant a site for the buildings. It was pointed out that some months ago a meeting was held at the Sydney town hall and one of the resolutions passed was, "That the medical profession should ask the treasurer to place a sum on the estimates for providing a consumption hospital." The honorary treasurer (Mr. Ser) promised to do so and also suggested certain sites and desired that the medical profession would inspect them and advise as to their suitability. This had been done and a portion of Crown land, 50 acres in extent, at Hornsby was considered an eminently suitable site. The deputation asked if the Government were prepared to grant this land for the purpose. The Treasurer said he would personally forward the matter. He saw no difficulty with regard to the land and had no doubt that a sum would be placed in the estimates for the erection of the building. This announcement led to the usual outcry by the residents of Hornsby against the erection of a hospital near them.

Queen Victoria Home for Consumptives.

At the last meeting of the executive committee of the Queen Victoria Home for Consumptives Dr. M'Intyre Sinclair was appointed resident medical officer of the new sanatorium at Wentworth. Dr. Sinclair is M.D. of Glasgow and D.P.H. of Cambridge and has been resident medical officer at an open-air sanatorium in Gloucester. Tenders were accepted for the erection of the new buildings at Wentworth at a cost of £2420.

Eye and Ear Hospital, Melbourne.

The committee of the Eye and Ear Hospital, Melbourne, is anxious to enlarge the building but has no available space. The committee has been trying to obtain a piece of ground adjoining and the property of the Metropolitan Board of Works. The Premier was recently asked to induce the Board of Works to give up the site in exchange for another. He intimated his willingness to assist, but the Board has to build offices on the site in question and such an erection would shut out light and air from the hospital.

Albury Hospital, New South Wales.

Mr. M. O'Shaughnessy, one of the paid medical officers of the Albury Hospital (New South Wales), lodged a complaint against Mr. A. Andrews, one of the honorary surgeons to the hospital and the Government medical officer, of setting the rules at defiance and reflecting, by inference, on the capacity of the paid medical officers. Mr. Andrews explained that he was instructed by the police to attend a patient in the hospital in his capacity of Government medical officer, although it was against the rules, and he said that in similar circumstances he would do the same. The committee resolved: "That Mr. Andrews be notified that his services as honorary surgeon were no longer required at the hospital," as he had deliberately set the rules at defiance.

Death of Mr. Robert Dalzell Ward, M.R.C.S. Eng.

Mr. Robert Dalzell Ward was one of the oldest residents of North Sydney, where he had lived for 50 years and where he died at the age of 83 years. He arrived in Sydney in April, 1852, and settled at North Shore, where he was the first, and for some time the only, medical practitioner. He soon acquired a very lucrative practice and endeared himself to a large circle by his largeness of heart and active sympathy. He was for many years a member of the New South Wales Medical Board.

June 10th.

Medical News.

UNIVERSITY OF GLASGOW.—The following have passed the fourth (final) professional examination for the following degrees:—

M.B., C.M.—Thomas Small Goodwin.

M.B., Ch.B.—William Kirkpatrick Anderson, William Armitage, Robert James Arthur, †Alexander Grey Banks, §James Campbell Bringan, Margaret Elizabeth Bryson, ¶Angus Campbell, Robert Harold Campbell, John Shedden Dale, Alexander Dick, Donald Douglas, M.A., Andrew Robertson Dow, James Drummond, ‖George Ferguson, John Ferguson, M.A., ‖Eric Dalrymple Gairdner, William White George, John Miller Gordon, John Guthrie, John Andrew Hagerty, ‖Ronald Dingwall Hodge, John Brown Dalzell Hunter, Neil M'Coll Hutchison, ‖Ernest David Jackson, §George Rutherford Jeffrey, §William Fletcher Kay, John Kennedy, *Andrew Miller Kerr, §Robert Laurie, Archibald Leitch, Stanley Everard Lewis, Joseph Paterson Lusk, Alexander Macintyre, †Ivy M'Kenzie, M.A., B.Sc., John Chancellor M'Kenzie, Alexander Maclean, ¶Alexander M'Gaw McMillan, Dugald Henry Macphail, ‖Richard Makins, Robert Harry Manson, ‖Janet Thomson Miller, William Alexander Milne, Alexander John Mitchell, Allan Dixon Mitchell, §John Morison, §John Muir, B.Sc., §James Stuart Nicolson, James Nimmo Prentice, §John Mark Reid, ‖John Walker Renton, ‖Thomas Richmond, ‖David Riddell, *William George Rodger, Norman Cumming Rogers, Andrew Taylor Ross, †James Crawford Ross, ‖James Russell, James Smith, John Williamson Smith, Robert Cassels Smith, David Spence, John Stevenson, John Barbour Stewart, Joseph Swinburn Townley, ‖William Wagner Turner, ‖Thomas

Irby Wallace, Alexander Brown Watt, †Joseph White, M.A., B.Sc., and David Ashley Wilson.

Passed with distinction—° in surgery and clinical surgery, practice of medicine and clinical medicine, and midwifery; † in surgery and clinical surgery and practice of medicine and clinical medicine; ‡ in surgery and clinical surgery and midwifery; § in surgery and clinical surgery; ‖ in practice of medicine and clinical medicine; and ¶ in midwifery.

UNIVERSITY OF DUBLIN: TRINITY COLLEGE.—At examinations held at the School of Physic, Trinity Term, the following candidates were successful:—

PREVIOUS MEDICAL EXAMINATION.

Botany and Zoology.—Walter G. M. Anderson, Edward C. Stoney, Thomas J. Cobbe, Robert E. Wright, Alfred G. Alexander, Charles T. Atkinson, Francis A. Coppinger, Alexander L. Otway, Crosbie Maurice B. Talbot, John C. P. Beatty, Rev. Thomas Brook, John W. Tomb, Thomas H. Peyton, George E. G. Vickery, Reginald Holmes, Edwin B. Bate, Harry Ft. Johns, William Nicholson, Dudley F. Torrens, Thomas M. Crawford, and Charles G. Sherlock.

Physics and Chemistry.—Frank R. Seymour, Francis R. Coppinger, Edward O. Marks, John D. Sands, Thomas J. Cobbe, Ralph S. Oldham, Theodore C. Somerville, John W. Tomb, Henry D. Woodroffe, Samuel G. S. Haughton, Gustav W. Thompson, Richard Connell, Cecil Conyngham, John C. P. Beatty, Henry J. Keane, Reginald Holmes, Robert B. Jackson, James E. MacFarlane, George E. G. Vickery, Basil Brooke, George B. M'Caul, Thomas L. de Courcey, Edward Gibbon, Howard S. Millar, Henry D. Drennan, Thomas H. Peyton, and Ernest C. Phelan.

The following prizes and scholarships have been awarded:—

Prizes.—Surgical travelling prize, Charles A. K. Ball; and special prize, Richard A. Stoney.

Scholarships.—Anatomy and Institutes of Medicine: James G. Wallis (Trinity College scholarship); and John Cunningham (Stewart scholarship). Physics, Chemistry, Botany, and Zoology: Francis O. B. Ellison. Purser Medal in Institutes of Medicine: William J. Powell. Diploma in Public Health, Part I.: Francis W. Lamb.

FOREIGN UNIVERSITY INTELLIGENCE.—*Madrid:* Dr. Sebastian Recaséns Gerol has been appointed to the chair of Midwifery and Gynæcology.—*Munich:* Dr. von Kupffer, director of the Anatomical Institute, is retiring. His successor will be Dr. Bonnet of Greifswald, who was formerly for many years *privat-docent* in Munich.—*Vienna:* Dr. Riehl of Leipsic has been appointed to the chair of Dermatology formerly held by the late Dr. Kaposi.—*Würzburg:* Professor A. von Kölliker is giving up part of his work which will be taken over by Dr. Phillip Stöhr, the Professor of Anatomy.

SCHOOL OF MEDICINE OF THE ROYAL COLLEGES, EDINBURGH.—At a meeting of the governing board of the School of Medicine of the Royal Colleges, Edinburgh, the secretary, Mr. R. N. Ramsay, reported that the number of students attending the school during the winter session 1901-1902 was 1143, and during the summer session 1902 the number was 1148.

UNIVERSITY OF CAMBRIDGE: LONG VACATION COURSES, 1902.—The work of the long vacation courses in pathology, public health, chemistry, and pharmacology was commenced on July 7th. In the pathological department Professor G. Sims Woodhead will lecture on general pathology, giving demonstrations on morbid anatomy from formalin and post mortem-room specimens, while Mr. T. Strangeways-Pigg will treat special pathology, Mr. A. E. Shipley animal parasites, especially those affecting man, and Dr. G. H. F. Nuttall the general and special bacteriology of infective disease. Mr. T. Strangeways-Pigg also lectures on clinical pathology, for senior students only. Mr. J. E. Purvis is giving demonstrations in elementary physical and meteorological principles and in laboratory practice in the chemical and microscopical examination of water, air, gases, foods, disinfectants, &c. This course is suitable to the requirements of the Diploma in Public Health and will be given in the University chemical laboratory. Professor Bradbury and Mr. W. E. Dixon are giving a course of lectures and demonstrations in pharmacology.

THE CORONATION BAZAAR.—The hospitals which minister to the needs of the sick and suffering poor of the metropolis have always been sure of Royal sympathy in their endeavours, and, as our readers well know, Her Majesty the Queen takes a special interest in hospitals for children. It was, we are certain, with real pleasure that Queen Alexandra performed the inaugural ceremony at the Coronation Bazaar which was opened at the Royal Botanical Gardens on July 10th in aid of the Hospital for Sick Children, Great Ormond-street, W.C. The weather was not at all kindly, but despite this fact large crowds assembled along the line of route from Buckingham Palace in order to gain a glimpse of the Queen and the other Royal personages who accompanied her to the bazaar. The arrangement of the stalls was pretty and novel. In place of the tawdry draperies which are usually associated with affairs of this kind stalls were erected of green lattice-work covered with creepers and roses, a scheme which was quite in keeping with the grounds in which the bazaar was held. A brilliant company was present and in addition to most of the leaders of society were to be seen the faces of many well-known Colonials and Americans, including some of the Indian princes who are on a visit to this country. On her arrival at the bazaar the Queen was presented with a bouquet of orchids by Miss Joan Lucas, the daughter of the chairman of the hospital, and after spending more than an hour in walking round the stalls and making various purchases the Royal party, which included Princess Victoria, Princess Christian and her daughter, Princess Henry of Battenberg, the Duke and Duchess of Connaught with Princess Margaret of Connaught, the Duke and Duchess of Aosta, and Prince and Princess Charles of Denmark, left the grounds. Various entertainments were in progress during the three days on which the bazaar was held and several prominent members of the theatrical profession gave their assistance. We understand that the hospital will benefit by a very large amount, but as the proceeds from all the stalls have not yet been sent in it is impossible to give the exact figures.

JOINT SMALL-POX HOSPITALS.—It is very necessary that all towns and urban districts should be prepared to treat by efficient isolation the first case of small-pox that may arise in their midst. It is unnecessary to state that the majority of districts are not prepared with a suitable hospital that complies with the requirements of the Local Government Board, and those that are so provided, or console themselves by thinking that they are, have an old disused mansion or a dilapidated wooden structure without proper and efficient sanitary arrangements and not far enough removed from inhabited houses. To remedy this state of matters Mr. E. Sergeant, the medical officer of health to the county council of Lancashire, has interviewed a number of the urban district councils in his district, afterwards summoning a conference of representatives of these bodies which could conveniently combine for isolation purposes. The meeting took place in Wigan on July 10th and was well attended. Mr. R. Sephton, chairman of the health committee of the Lancashire County Council, presided, and was supported by several members of the committee. Mr. Sergeant pointed out the necessity for early isolation of the first case; he stated that the presence of the disease within half a mile of a populous community was a source of danger and he mentioned the requirements of the Local Government Board in regard to the situation of a small-pox hospital. He pointed out the desirability of authorities combining for small-pox purposes. In this way, he stated, economy was secured for each authority as they would pay much less towards the initial structural charges and there was a reduction in the annual cost of maintenance, &c. Efficiency also was secured, for a larger number of beds would always be available for the wants of each district than could reasonably be provided individually. Then the security of having the provision would be worth all the establishment charges. The proposed hospital area was comprised within a radius of 10 miles and the population was 222,937 in the administrative county and with the county borough of Wigan it was 283,701. For this 40 beds would be sufficient in the first instance, with provision for extension. The cost exclusive of land would be £20,000 and the up-keep when not occupied would be £500 per annum, and Mr. Sergeant estimated that with money at 3½ per cent. it would take £1600 per annum, or less than ½*d.* in the £ on the assessable value of the whole district, for the total expenditure and repayment of capital in 30 years with interest. A similarly combined district exists at Elswick and it was stated that a penny per head of the population per annum was ample for the purpose. An interesting discussion followed, but as the representatives were only empowered to hear Mr. Sergeant's views they promised to report to their authorities and the meeting was adjourned to a date in August. There is no doubt that this area suggested by Mr. Sergeant is a useful one for combination purposes. The urban district councils can combine under the Isolation Hospitals Act, 1893, and it will be an advantage for them to do so, but it will be an

advantage also if the county borough of Wigan will join the combination.

IN Devonport dockyard men are in future to be employed only on condition that they are revaccinated.

DONATIONS AND BEQUESTS.—The Samaritan Free Hospital has received a grant of 30 guineas from the Corporation of the City of London.

PRESENTATIONS TO MEDICAL MEN.—At the meeting of the St. Austell board of guardians held on July 11th the guardians presented Mr. William Mason, L.R.C.P., L.R.C.S. Edin., district medical officer, with a marble and bronze clock and ornaments on the occasion of his marriage. The chairman (the Rev. H. N. Purcell), in making the presentation, said that the guardians regarded Mr. Mason as an old friend and that he was known throughout the union for his kindness to the poor.—Mr. J. E. Richards, M.R.C.S. Eng., L.R.C.P. Lond., assistant surgeon to the Pentoe collieries, has been presented with a gold watch and chain on the occasion of his leaving the district.

ST. THOMAS'S HOSPITAL MEDICAL COLLEGE.—The prizes gained by the students successful at the examinations held during the past winter session were distributed on July 10th by Sir Henry F. Norbury, K.C.B., Director-General of the Medical Department of the Royal Navy. The chair was taken by Mr. J. G. Wainwright, J.P., treasurer of the hospital. Sir Henry Norbury subsequently referred to the question of the disposition of the medical officers on the eve of a naval action and considered that it might be advisable to leave a few on board the fighting ships and remove the others to the hospital ships who would return fresh after the fight. He acknowledged the deep debt of gratitude that the navy owed to St. Thomas's Hospital, which had produced many distinguished naval men, and he invited the attention of young medical men to the advantages of the Medical Department of the Royal Navy as a career, among which, he said, were provision for the present and for old age, no working expenses, and little or no nightwork.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The Midwives Bill.

THIS Bill has now passed through all its stages in the House of Lords and has been returned in its amended form to the House of Commons in order to be dealt with there.

Mine Accidents.

The Home Secretary has decided to appoint a departmental committee to inquire into accidents in mines arising from the use of electricity.

HOUSE OF COMMONS.

THURSDAY, JULY 10TH.

The Metropolitan Police Head-dress.

Mr. RITCHIE, in reply to Mr. REGINALD LUCAS, said that the question of supplying the Metropolitan Police with a special head-dress during very hot weather had been the subject of consideration on many occasions, but it had not been found possible to provide a substitute for the helmet at present in use which would afford better protection both from heat and from blows.

Transport for Small-pox Cases in London.

Sir SEYMOUR KING asked the President of the Local Government Board whether he had under consideration recommendations of the ambulance committee of the Metropolitan Asylums Board, made in reports to the managers dated 24th February and 8th March, urging the establishment of additional stations and shelters and of land transport service for small-pox patients, the latter to be used as an alternative to river transport; whether any estimate of the cost had been submitted by the ambulance committee or the Asylums Board; and whether, having regard to all the circumstances, the Local Government Board would abstain from sanctioning these proposals until the councils of the metropolitan boroughs had been consulted.—Mr. LONG replied: I have seen reports of the ambulance committee of the Metropolitan Asylum District bearing on these matters, but no proposals on the subject have been submitted to me by the managers. As I understand, no definite decision has been arrived at by them. In the event of any application being made to me for sanction to proposals of this kind I should not fail to give careful consideration to the various interests involved, but until the proposals are before me I could not say what course I should adopt with regard to them.

The Employment of Children.

Mr. RITCHIE asked leave to introduce a Bill to make better provision for regulating the employment of children. He explained that the measure in the main embodied the recommendations made by the departmental committee which last year inquired into this subject. He had no hope of being able to get the Bill passed during the present session but he introduced it in order that those who were interested in the matter might ascertain and have an opportunity of studying the proposals of the Government. Power was given to county councils and borough councils to regulate by by-laws the employment of children. Of course, those by-laws would not apply to children already protected in their employment by the Factory Acts and the Mines Act. The making of the by-laws was entirely at the option of the councils, but when made they would require the sanction of the Home Office before they could come into operation and the Home Office before giving its sanction would ascertain the local opinion with regard to the by-laws. It was proposed to prohibit the employment of children in carrying weights which were injurious to health and also in other occupations likely to be injurious to life, limb, or health.—Sir WALTER FOSTER congratulated the Home Secretary on having brought forward legislative proposals on this subject. For some years, he said, children in this country had been employed in conditions conducive neither to health nor to morality.

Leave was given and the Bill was introduced and formally read a first time.

Work in the Fruit-preserving Trade.

Mr. TALBOT moved that the special order of the Secretary of State for the Home Department, dated June 17th, 1902, prescribing conditions for the fruit-preserving trade be annulled. He explained that he made this motion in order to take exception to the sixth section only of the order which regulated the hours of girls under 16 years of age. He submitted that the age limit should be 18 years.—Mr. TENNANT said that he would rather see the whole order sacrificed than sanction this section, under which young girls and women might be worked for 22 hours out of the 24.—Mr. RITCHIE, in reply, said that the order was applicable to the jam trade only in the fruit season of June, July, August, and September and if the motion were adopted the industry would be carried on during the present season under no regulation whatever. His right hon. friend must remember that this was an entirely new departure and that before the Act of 1901 there was no limitation at all of the hours of labour in these factories. He had now made regulations both as to hours of labour and as to sanitation which he hoped would result in considerable improvement, but he had felt bound to proceed tentatively in this matter. He would point out that the order provided that a register must be kept in these factories which would be useful in showing whether at a later date the Home Office would be justified in making the rule more drastic. His right hon. friend might feel certain that he would watch the operation of the order with the greatest care and would do his best at a future time to deal with any such scandals as those which he anticipated might possibly arise. He hoped he would not press his motion.—The motion was carried to a division and defeated by 88 against 76 votes.

FRIDAY, JULY 11TH.

Enteric Fever among the Troops in South Africa.

Sir WALTER FOSTER asked the Secretary of State for War whether he would state the total number of deaths from enteric fever amongst our troops in South Africa from Oct. 11th, 1899, to Oct. 10th, 1900, the first year of the war; from Oct. 11th, 1900, to Oct. 10th, 1901, the second year of the war; and from Oct. 11th, 1901, to May 31st, 1902, when the war ended; and what had been the mortality from enteric fever per 1000 mean strength during these periods.—Mr. BRODRICK replied: The statistics are as follows:—

	Deaths.	Rate per 1000.
Oct. 13th, 1899, to Oct. 12th, 1900	3774	20·97
Oct. 13th, 1900, to Oct. 11th, 1901	2561	10·63
Oct. 12th, 1901, to May 30th, 1902 ...	1656	6·84

London Water Question.

Sir M. BROWNAGGREE asked the President of the Local Government Board whether sub-clause 6 of Clause 15 of the London Water Bill which was inserted by the Joint Committee would have the effect of preventing any equalisation of water charges.—Mr. LONG replied: I think not. The Water Board will acquire all the rights and powers of the several water companies, and, with a view to the equalisation of the water charges, they will be able to alter, within the limits prescribed by the Acts relating to any particular company, the rates now charged by that company for the supply of water, subject to this, that they must not reduce the rates below those in force during the quarter ended on June 24th, 1902, if such reduction would, or would be likely to, cause a deficiency in the water fund. The reason for this limitation is that the amount of any deficiency in the water fund would have to be made out of the general rates levied in the area under the Water Board.—The House went into Committee on the London Water Bill.—On Clause 1, which provides for the establishment of a Metropolitan Water Board to acquire by purchase and carry on the undertakings of the eight London water companies, an amendment was moved by Mr. LOUGH to withdraw from the proposed board the task of purchasing the undertakings and entrust it to some other body.—Mr. LONG, for the Government, opposed the amendment, arguing that the Water Board to be successful must have charge of the financial arrangements.—After the amendment had been discussed at considerable length it was rejected by 192 against 101 votes.

MONDAY, JULY 14TH.

Postmen and the Hot Weather.

Mr. ARTHUR LEE asked the Secretary to the Treasury, as representing the Postmaster-General, whether he would consider the advisability of providing postmen with lighter clothing and headgear during the present hot weather.—Mr. AUSTEN CHAMBERLAIN replied: Postmen are already supplied with serge uniform for summer wear, which is made as light as possible having regard to the hard usage that it has to bear, and London postmen are provided with a light summer shako. All postmen are allowed to provide themselves with straw hats to wear on exceptionally hot days, and it is not considered that anything more is necessary.

The Preservatives Question.

Mr. LAMBERT asked the President of the Local Government Board whether his attention had been called to a circular, dated June 10th

which had been issued by the sanitary authority of the borough of Eastbourne, setting forth the recommendations of the Preservatives Committee and expressing the intention of that authority to act upon them; whether, seeing the division of opinion that existed as to the practicability of the adoption of those recommendations, he could issue a circular to public authorities recommending them to await the decision of the Government before adopting them as a basis of procedure; and whether he could inform the House when he proposed to deal with the subject.—Mr. LONG replied: I have seen a copy of the circular referred to in the question. I am not at present in a position to make any statement as regards legislation on the subject of the report of the Preservatives Committee. I have no power to require the adoption of any particular course by local authorities with respect to the enforcement of the law as to food adulteration, and it does not appear that there would be any advantage in my issuing a circular as suggested.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.

BUZZARD, E. FARQUHAR, M.B. Oxon, M.R.C.P. Lond., has been appointed Pathologist to the National Hospital for the Paralysed and Epileptic.

CHALDECOTT, JOHN HENRY, L.R.C.P. Lond., F.F.P.S. Glasg., has been appointed Honorary Anæsthetist to the Italian Hospital, Queen's-square, W.C.

CLAYTON, T. M., M.B., B.S. Durh., has been appointed Medical Officer of Health to the Gateshead Town Council.

COATES, W. H., M.B. Durh., has been appointed Public Analyst to the Withernsea Urban Council.

GRINDROD, J. A., M.R.C.S. Eng., has been re-appointed Medical Officer of Health to the Horden Urban District Council.

MURRAY, J. G., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Certifying Surgeon under the Factory Act for the Scarborough District.

PRIDMORE, JOHN WALTER, M.R.C.S., L.R.C.P. Lond., has been appointed District Medical Officer and Public Vaccinator of the Ryde District of the Isle of Wight Union.

SINCLAIR, M. M'INTYRE, M.D. Glasg., D.P.H. Cantab, has been appointed Resident Medical Officer to the Sydney New Sanatorium for Tuberculosis Wentworth Falls, Blue Mountains, N.S.W.

SLADER, GEORGE BURGESS, L.R.C.S. and L.M. Irel., L.S.A. Lond., has been re-appointed Medical Officer of Health to the Gainsborough Rural District Council and Medical Superintendent of the Rural District Council's Isolation Hospital, Gainsborough.

TOYE, C. J., M.D. Lond., has been appointed Medical Officer of Health for the Northam (Devon) District Council, vice Mr. Mahood, resigned.

WYNNE, WALTER, M.B., M.S. Edin., has been re-appointed Medical Officer of Health to the Rye Corporation.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

AYR COUNTY HOSPITAL.—House Surgeon. Salary £70 per annum, with residence, board, and washing.

BIRKENHEAD UNION INFIRMARY, WORKHOUSE, AND SANATORIUM.—Resident Assistant Medical Officer. Salary £120 per annum, with board, washing, and apartments.

BIRMINGHAM AND MIDLAND EAR AND THROAT HOSPITAL.—House Surgeon. Salary at the rate of £50 per annum.

BIRMINGHAM AND MIDLAND FREE HOSPITAL FOR SICK CHILDREN.—Resident Surgical Officer. Salary £60, with board, washing, and attendance.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria-park, E.—Resident Medical Officer. Salary £100 per annum, with board, &c.

CITY POORHOUSE AND HOSPITAL, Parliamentary-road, Glasgow.—Medical Officer (Male Junior Assistant). Salary £90 per annum, with board and apartments.

COUNTY ASYLUM, Mickleover, Derby.—Junior Assistant Medical Officer. Salary £120, rising to £150 per annum, with furnished apartments, board, washing, and attendance.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—Assistant Surgeon. Also Assistant Physician.

EAST SUFFOLK AND IPSWICH HOSPITAL.—Second House Surgeon, unmarried. Salary £90 per annum, with board, lodging, and washing.

GRAVESEND HOSPITAL.—House Surgeon. Salary £90 per annum, with board and residence.

HALIFAX UNION POOR-LAW HOSPITAL.—Resident Medical Officer. Salary £130 per annum, with apartments, rations, and washing.

HAYDOCK LODGE ASYLUM, Lancashire.—Assistant Medical Officer. Salary £175 a year, with furnished quarters, board, washing, &c.

HOLLOWAY SANATORIUM HOSPITAL FOR THE INSANE, Virginia Water, Surrey.—Junior Assistant Medical Officer. Salary £150 per annum, rising to £200, with board, lodging, and attendance.

HOSPITAL OF ST. FRANCIS, New Kent-road, S.E.—Two Casualty Medical Officers.

LIVERPOOL DAVID LEWIS NORTHERN HOSPITAL.—Assistant House Surgeon. Salary £70 per annum, with residence and maintenance. Also Honorary Anæsthetist.

LONDON THROAT HOSPITAL, 204, Great Portland-street.—House Surgeon. Salary £50 per annum.

LONDON HOSPITAL, Whitechapel, E.—Assistant Physician.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury.—Registrar. Honorarium 50 guineas per annum.

NORTH CAMBS HOSPITAL, Wisbech.—Resident Medical Officer. Salary £150 per annum, with furnished house.

NORTH-EASTERN HOSPITAL FOR CHILDREN, Hackney-road, N.E.—House Surgeon for six months. Salary at rate of £80 per annum, with board, residence, and laundry.

NORTH STAFFORDSHIRE INFIRMARY AND EYE HOSPITAL, Harthill, Stoke-upon-Trent.—Assistant House Surgeon for six months. Board, apartments, and washing, and at least £25 as honorarium.

NORTH-WEST LONDON HOSPITAL, Kentish Town-road.—Assistant Surgeon.

NOTTINGHAM GENERAL DISPENSARY.—Senior Resident Surgeon, unmarried. Salary £200 per annum, increasing by £15 every year. Also Assistant Resident Surgeon, unmarried. Salary £160 per annum, increasing by £10 every year, with apartments, attendance, light, and fuel in each case.

ROTHERHAM HOSPITAL AND DISPENSARY.—Senior House Surgeon. Salary £110 per annum.

ROYAL ALBERT HOSPITAL, Devonport.—Assistant House Surgeon. Salary at the rate of £50 per annum, with board, lodging, and washing.

ROYAL DEVON AND EXETER HOSPITAL, Exeter.—Junior Assistant House Surgeon. Salary at the rate of £50 per annum, with board, lodging, and washing (no stimulants).

ROYAL LANCASTER INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum, with residence, board, attendance, and washing.

ST. PAUL'S HOSPITAL FOR SKIN AND GENITO-URINARY DISEASES, Red Lion-square, Holborn, W.C.—Honorary Assistant Surgeon.

SALOP INFIRMARY.—Assistant House Surgeon for six months. Salary at rate of £50 per annum, with board and apartments.

SOUTH HANTS AND SOUTHAMPTON (ROYAL) HOSPITAL.—Junior House Surgeon for six months. Salary £60 per annum, with rooms, board, and washing.

SOUTHPORT INFIRMARY.—Resident Junior House and Visiting Surgeon (unmarried). Honorarium at the rate of £60 per annum, with residence, board, and washing.

STOCKPORT INFIRMARY.—Junior Assistant House Surgeon for six months. Salary at rate of £40 per annum, with board, washing, and residence.

STROUD GENERAL HOSPITAL.—House Surgeon. Salary £80 per annum, with board, lodging, and washing.

SUSSEX COUNTY HOSPITAL, Brighton.—Second House Surgeon and Anæsthetist, unmarried. Salary £80 per annum, with board and residence.

SWANSEA GENERAL AND EYE HOSPITAL.—Resident Medical Officer, Salary £75, with board, apartments, washing, and attendance.

VICTORIA HOSPITAL FOR CHILDREN, CHELSEA, AND VICTORIA CONVALESCENT HOME, BROADSTAIRS.—House Physician. Honorarium of £25 and will be provided with board and lodging in the Hospital.

WESTON-SUPER-MARE HOSPITAL.—House Surgeon. Salary £100 per annum, with board and residence.

WEST BROMWICH DISTRICT HOSPITAL.—Resident Junior House Surgeon. Salary £50 per annum, with board, lodging, washing, and attendance.

Births, Marriages, and Deaths.

BIRTHS.

STEEDMAN.—On July 3rd, at Streatham, S.W., the wife of J. F. Steedman, F.R.C.S. Eng., of a daughter.

THOMPSON.—On July 13th, the wife of F. B. Thompson, M.R.C.S., L.R.C.P. Lond., of a son.

MARRIAGES.

HAWTHORN—METCALFE.—On Wednesday, July 16th, at St. Matthew's Church, Leyburn, by the Rev. E. Orde-Powlett, Rector of Wensley, assisted by the Rev. W. K. Wyley, Vicar of Heliona Bumpstead, Essex, brother-in-law of the bride, the Rev. John Hawthorn, M.A. (Camb.), of Leyburn, to Mary (May), second daughter of Richard Metcalfe, M.D., of Eastfield Lodge, Leyburn.

HENDERSON—KIRKWOOD.—At St. Stephen's Parish Church, Edinburgh, on the 9th inst., by the Rev. J. F. W. Grant, Rev. W. Nicol, D.D., Aberdeen, and Rev. J. Hood Wilson, D.D., John Henderson, M.B., C.M., The Elms, Lasswade, to Winifred Nora Kirkwood, only daughter of the late James Kirkwood, Esq., 2, Doune-terrace, Edinburgh.

NICHOLLS—GEE.—On the 10th inst, at S. John the Baptist's Church, Knighton, by the Revd. James Jeakes, M.A., Prebendary of S. Paul's Cathedral, late rector of Hornsey, assisted by the Revd. C. Page Eden, M.A., vicar, Francis John Nicholls, M.B., B.C. Cantab., M.R.C.S., L.R.C.P., of Ellerslie, Eltham, Kent, second son of Edward W. Nicholls, of 62, Queen's-gardens, Hyde Park, to Mabel Violet, third daughter of H. Simpson Gee, J.P., of Knighton Frith, Leicester.

WALKER—ROBINSON.—On July 12th, at the Church of St. Mary Magdalene, Addiscombe, George Stephen Walker, M.R.C.S., to Jessie Maude Phoebe Robinson, youngest daughter of the late Rev. W. Mills Robinson.

DEATHS.

EDWARDS.—On July 9th, at Eastbourne, John Augustus Edwards, M.R.C.S. Eng., L.S.A., aged 90 years.

MCKENNA.—On July 4th, at Bayonne, France, Cornelius John McKenna, Surgeon-Lieutenant-Colonel I.M.S., retired, aged 60 years.

STIVEN.—On July 12th, at Manor Lodge, Harrow, E. W. F. Stiven, M.D. Edin., in his 51st year.

N.B.—A fee of 2s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

THE KING AND THE QUACK.

IN a note at p. 126 of THE LANCET of July 12th, 1902, we referred under this heading to an article, which seemed to us not only foolish but dangerous, published in a London newspaper and entitled: "How the King might have been Cured without Operation." Since then our attention has been called to the same article, or substantially the same, appearing again under the name of Mr. T. R. Allinson in a country newspaper, the *Blackburn Weekly Telegraph*, together with copious advertisements of "medical" books written by Mr. Allinson, and of an infants' food and a non-intoxicating beverage put on the market by the same person. In a column entitled: "Hints on Health," presumably written by Mr. Allinson, certain answers to correspondents contain many recommendations of the compounds advertised. The editor of the *Blackburn Weekly Telegraph* seems to be an easy-going person, but we must repeat what we have already said, that if this sort of balderdash written by Mr. Allinson about his ability to cure the King without operating results in poor dupes going to him for treatment the newspaper which publishes his rubbish incurs a grave moral responsibility. Whether persons actually suffering from severe abdominal trouble ever do go to Mr. Allinson we are not aware, but we note from a paragraph in another issue of the *Blackburn Telegraph* that he is willing to treat small-pox but not to notify the patients as suffering from infectious disease in accordance with the Act.

ADVERTISEMENT.

WE have received from a correspondent an extraordinary extract from the *Bexhill Chronicle*, dated June 28th. The article is entitled "Healthy Life at a Health Resort" and consists of a wholesale eulogy of Bexhill founded upon an interview with Mr. H. H. Hulbert. Bexhill, Mr. Hulbert is made to say, "is replete with wonderful advantages for the invalid"; he has himself taken a house there in which, according to the *Bexhill Chronicle*, he will partially establish his own private home and found a select boarding establishment to test his opinions. Mr. Hulbert, we learn, again from the *Bexhill Chronicle*, is medical officer to the Health and Strength School, medical adviser to the Dowsing Radiant Heat and Light Company, lecturer on voice production and health to the teachers of the School Board for London, and lecturer on the voice to the Guildhall School of Music. Let us hope that Mr. Hulbert has been victimised by some enterprising reporter, for certainly the things that he says, or is reported to say, in the article would seem to show peculiar ideas of professional propriety.

WHY NOT CLARET?

WE learn that His Majesty the King received the offer from various wine merchants and growers of the Bordeaux district of a thousand bottles of claret or more if so desired The bottles were not to bear any names of firms or owners of vineyards and the gift was simply intended to commemorate the Coronation. It is stated that Lord Pembroke in his reply regretted that claret was not used in the hospitals of this country but that all the same he thanked the wine-growers who had made this generous offer. It may be true that claret is not used in British hospitals, but is there any reason why it should not be—any reason so cogent as to cause this excellent gift horse to be looked suspiciously in the face? Claret, by which we mean sound Bordeaux such as this wine would have been, is an excellent and wholesome drink and we think that it is a thousand pities from every point of view that the generous and kindly thought of the Bordeaux growers was not more appreciated.

THE RUSTING OF INSTRUMENTS IN DAMP CLIMATES.

To the Editors of THE LANCET.

SIRS,—Can any of your readers who have had experience of damp climates tell me of an efficient method of preserving instruments from rust other than the application of oil or greasy materials? I should be very glad of information.

I am, Sirs, yours faithfully,

June 20th, 1902. TROPICS.

THE GRADUAL DEVELOPMENT OF FAHRENHEIT'S THERMOMETRIC SCALE.

IN the June number of *Knowledge* Sir Samuel Wilks gives some further particulars in continuation of his account of the origin of Fahrenheit's scale, reference to which was made in THE LANCET of Feb. 22nd, 1902, p. 565. He now replies to a critic whose objections to his views were mentioned in THE LANCET of May 10th, p. 1369. Sir Samuel Wilks says: "It is true that neither in Fahrenheit's biography, or indeed in any work of the time, is there any distinct account of the *rationale* of his scale; for had it been otherwise an explanation of it would have appeared in works of chemistry, the authors of which profess ignorance of its meaning. It is clear, therefore, that what is known can only be gathered by inference from writers who have interested themselves in the matter, and these, as far as my reading has gone, have attributed to Newton the origin of the scale. ..... We have only to multiply Newton's figures by eight to obtain Fahrenheit's scale. The scale of the latter, in his first constructed thermometer, was plus 90 and minus 90, but it is not clear how this could have assisted in the framing of his subsequent scale, as the numbers did not refer to freezing or boiling points. That thermometer, as is known, he discarded and then made another, taking for his fixed point the temperature of the human body. This was Newton's method, by which he had worked. It seems to be correctly said that Newton was in doubt as to a fixed point for boiling, for he speaks of boiling and violent boiling, as if they implied different degrees of heat. Newton's paper appeared in the Philosophical Transactions for 1701, and although anonymous has always been attributed to our great philosopher. It is so said by Brewster, by Kelvin, by Renou, and others."

POROUS WALLS.

To the Editors of THE LANCET.

SIRS,—On seeing your comment on the advantages of porous walls I was reminded that only the day before an architect of 25 years' standing had informed me that however porous bricks may be they lose this property *soon after forming part of a dwelling* (whether from fungous growths or not he could not say). It would therefore be well if the builder were to test walls that have been in use for some time. If they then retained their pores, although these might form "inlets" for fresh air, one can easily picture circumstances under which they might form "outlets"—or rather receptacles—for germs of scarlet fever or other exanthemata. It would be of use if this matter were worked out thoroughly in these days when the medical profession is being looked to for advice about sanatoriums, &c.

I am, Sirs, yours faithfully,

July 11th, 1902. T. C. B.

THE LAW FUND.

TRUSTEES: THE PRESIDENT OF THE ROYAL COLLEGE OF PHYSICIANS OF LONDON, THE PRESIDENT OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND, AND THE MASTER OF THE SOCIETY OF APOTHECARIES OF LONDON.

THE following additional subscriptions have been received by Dr. Paramore, 2, Gordon-square, W.C.:—

	£	s.	d.
Sir Charles Gage Brown, K.C.M.G.	1	1	0
Dr. G. H. Sowry	0	5	0
Dr. F. W. Walker	0	10	6
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Dr. James More	0	10	0
J. L. G.	1	0	0
From a Member of the Profession who Sympathises but has little to give in the way of practical help	0	5	0
Mr. W. G. Rowntree	0	10	0
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Dr. L. Vernon-Jones	0	10	6
Dr. Samuel Moore	0	5	0
Overcome Evil with Good	0	5	0

MEDICAL ETIQUETTE IN THE COLONIES.

WE mentioned in our issue of July 12th (p. 125) that the rules governing medical etiquette are in some ways different in the colonies from those existing in this country and that it was perhaps necessary for medical men to advertise in the public press the hours at which they could be seen. But however necessary this may be in sparsely inhabited countries like Australia or New Zealand we cannot excuse the practice in the case of anyone living in Bombay. The following advertisement, which appears in the Bombay paper, the *Times of India* of June 14th and 21st, is not to our minds the proper way for a graduate of a university to make himself known:—

"Dr. J. M. Pereira, M.B., C.M. Edin., Specialist in Gynæcology. Consultation from 9 A.M. to 11 A.M., and 3 P.M. to 5 P.M. Beynon's Pharmacy, opposite Watson's Hotel."

We cannot find Dr. J. M. Pereira's name in the current Medical Register, but possibly the authorities of his university might give him a hint to withdraw his advertisements.

THE ARTIST'S BIRD AND THE PHYSICIAN'S REST.

IN mediæval times the cock was highly esteemed. Apart from his services in driving away lions he was, like Barnes Newcome, an authority upon the domestic affections and there is extant a long fourteenth-century poem wherein the domestic cock is held up as an example to parish clergy. Whatever he may have been in a mediæval town the cock is a nuisance in a modern town and on July 14th Mr. Val Prinsep appeared at the West London Police-court to answer a complaint by his neighbours of keeping noisy birds so as to be a nuisance. Mr. Prinsep lives at 1, Holland Park-road and keeps fowls. One of these fowls is a cock which is a veritable Tamagno amongst fowls. According to Dr. Henry Mills of St. Mary Abbott's-terrace it began to crow in the early hours of the morning and its voice was

so powerful that it was impossible to secure any sleep. This, however, is the *mêlier* of the cock and was recognised by the Sarum breviary.

"Surgamus ergo strenue,
Gallus jacentes excitat
Et somnolentes increpat,
Gallus negantes arguit
Gallo canente spes redit."

Mr. Prinsep undertook to improve matters and the summons was adjourned. There are quite enough noises in London without having them added to by cock-crowing and Mr. Prinsep would be well advised to give up his poultry or if he sighs for the country sound of crowing he might get a hen such as that kept by Mr. Gilbert's Princess. She was a confirmed misanthrope, but liked to be awakened in mediæval fashion by crowing. Hilarion, it may be remembered, on remarking, "Ah, then they have male poultry," was answered, "Not at all, the crowing's done by an accomplished hen." The female voice is softer than that of the male.

WANTED—A HOME.

To the Editors of THE LANCET.

SIRS,—Can any of your readers inform me of a home, preferably in Yorkshire or the Midlands, for a lady, 63 years of age, who suffers from an advanced stage of paralysis agitans? She suffers from insomnia and sometimes screams a good deal at night. She will be able to pay 30*s.* a week. I am, Sirs, yours faithfully,

G. N. EDMONDSON.

Uxbridge-street, Hednesford, Staffs, July 8th, 1902.

KNEIPP LINEN MESH.

THIS is an interesting material intended for ordinary underwear and made entirely, it is stated, from pure Irish linen yarn, a statement which is confirmed by a microscopic examination which we have made. Linen is a well-known clean and healthy material but its use as underwear has been somewhat limited owing to the chilly feeling which is experienced when it is worn next to the skin. The Kniepp linen underwear, however, is free from this disadvantage. It is a knitted elastic material which, while protecting the body from cold, freely allows of the escape of perspiration. It is particularly well suited for summer wear, cool yet protective. Unlike woollen garments, it is not stained by the perspiration from the axilla, a proof that the perspiration passes freely through the material. The specimens of underclothing which we examined and tried practically were submitted to us by the York-street Flax Spinning Company of Belfast and of 2, Milk-street, London, E.C.

RELIGION AND QUACKERY.

To the Editors of THE LANCET.

SIRS,—Some weeks back I sent you an advertisement taken from the *Catholic Times* of the "Buckfast Abbey Remedies," and you commented thereon in an annotation in your issue of June 28th (p. 1846). From this week's issue of the same paper (a copy of which I send you herewith) you will see that the monks of Buckfast Abbey are not alone in allowing their "care for the souls of their fellow-men to be adulterated with the desire to make money out of their bodily ailments." You will see that the Sisters of Charity at Rue St. Dominique, Paris, offer "St. Vincent de Paul's Elixir" by which anæmia, &c., is "completely cured" in 20 days—at 4*s.* 6*d.* a bottle. If this sort of thing goes on, would it not be well if some members of the medical profession were, by way of retaliation, to announce that they were prepared to preach, hear confessions, and perform some of the other functions peculiar to the clergy? But what an outcry there would be in the "religious" world if such a "sacrilege" were committed.

I am, Sirs, yours faithfully,

July 13th, 1902. E. J. H.

*** The monks at Buckfast Abbey are, we believe, all Frenchmen and therefore may not be aware of English prejudices on the subject of quackery. But we fancy that the medical profession in France is quite as averse to unqualified practice as is our own. Benedictine houses are all, we believe, autonomous and therefore the jurisdiction to interfere with the advertisements alluded to is difficult to find, but we feel sure that the Order as a whole would disapprove.—ED. L.

THE "Y" FUND.

SURGEON-GENERAL H. S. MUIR begs thankfully to acknowledge additional donations towards the above Fund from Surgeon-Major G. S. Robinson (Scots Guards), and the following officers of the Royal Army Medical Corps: Lieutenant-Colonels Morgan D. O'Connell and E. North; Majors H. J. Fletcher, W. C. Poole, and J. H. Curtis; and Captains J. R. E. Austin, W. D. Erskine, R. M. le H. Cooper, G. A. Moore, and G. J. Stoney Archer. The fund now amounts to £433. It may be explained that this is in response to an appeal made privately to members of the profession for benevolent aid in a distressing case which has been described in a letter sent to a limited number of medical men (who would help the cause by kindly "handing on" to *confrères*). Should any reader of THE LANCET desire further particulars with a view to expressing *practical sympathy*, a copy of the letter will be forwarded on application to Surgeon-General Muir, 26, Kensington-gardens-terrace, Hyde Park, London, W.

PHOTO-THERAPEUTIC APPARATUS.

Now that photo-therapy is engaging so much attention a description of new and improved appliances for the purpose is not without interest. In response to an invitation we have recently inspected such apparatus made by the Sanitas Electrical Company, Limited, of 7A, Soho-square, London, W. The most important appliance amongst these specialities is perhaps the Dermo Lamp for applying the Finsen light treatment. This lamp is handy, convenient, and portable, and gives a steady discharge of ultra rays from iron points. The points when worn out are readily replaced by new ones. Water circulates through the lamp to keep the electrodes cool. On this account the transmitting tube may be pressed against the affected part of the body and with extension pieces in the shape of a speculum the appliance may be used for insertion into the vagina, rectum, or other cavities of the body. The violet light emitted is intense. Amongst the special light apparatus should be mentioned the electric incandescent bath, the arc light bath, and a number of special appliances for local illumination. The double-light bath and the "Tricolour" light bath are also well designed, as are the bath apparatus for the treatment by light rays of the female genital organs and the revolving light bath chair.

Mal de Mer will find in the Students' Number of THE LANCET the information which he desires with regard to medical literature. We recommend the works of Dr. Hale White and Dr. Mitchell Bruce on Pharmacology and Therapeutics respectively. Dr. Carter's Elements of Medicine, the eighth edition of which was published a few months ago and was reviewed in the columns of THE LANCET of May 24th, 1902, is a work of the scope that our correspondent desires. Messrs. Rose and Carless's Surgery is also recommended. Yanatas is unknown to us; it has not been submitted to analysis in our laboratory.

M.R.C.S.—The vacancies are advertised in the local and medical papers in Australia and New Zealand, and but rarely in our columns. But the elected persons usually send us notice of their appointments. The registration fee is 25*s.*

Hatter.—The symptoms may not all be due to mischievousness. We recommend that the child should be taken to a medical man, with a view, if deemed necessary, of an alienist being consulted.

Robin.—The proceeding is usual in the United States and in most English colonies, but it has never been followed in this country and we should regret to see it begun.

Alien Constant Reader can style himself with perfect propriety "Dr." when practising in this country.

Splendide Mendax.—The newspaper in question is not worth notice.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (21st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.) West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.).

TUESDAY (22nd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Royal Ear (3 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.).

WEDNESDAY (23rd).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

THURSDAY (24th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

FRIDAY (25th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square, (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.).

SATURDAY (26th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing-cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (21st).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. E. G. Little: Clinique. (Skin.)

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury).—3.30 P.M. Dr. Batten: Hereditary Ataxy.

TUESDAY (22nd).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. H. Campbell: Clinique. (Medical.)

WEDNESDAY (23rd).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. J. Smith: Clinique. (Surgical.)

THURSDAY (24th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. Hutchinson: Clinique. (Surgical.)

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index to Vol. I. of 1902, which was completed with the issue of June 28th, and the Title-page to the Volume, were given in THE LANCET of July 5th.

VOLUMES AND CASES.

VOLUMES for the first half of the year 1902 are now ready. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

Cases for binding the half-year's numbers are now ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will ensure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

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Subscriptions (which may commence at any time) are payable in advance. Cheques and Post Office Orders (crossed "London and Westminster Bank, Westminster Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Offices, 423, Strand, London, W.C.

SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE. It has come to the knowledge of the Manager that in some cases higher rates are being charged, on the plea that the heavy weight of THE LANCET necessitates additional postage above the ordinary rate allowed for in the terms of subscriptions. Any demand for increased rates, on this or on any other ground, should be resisted. The Proprietors of THE LANCET have for many years paid, and continue to pay, the whole of the heavy cost of postage on overweight foreign issues; and Agents are authorised to collect, and do so collect, from the Proprietors the cost of such extra postage.

The Manager will be pleased to forward copies direct from the Offices to places abroad at the above rates, whatever be the weight of any of the copies so supplied. Address—THE MANAGER, THE LANCET OFFICES, 423, STRAND, LONDON, ENGLAND.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, July 17th, 1902.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
July 11	30·02	N.W.	0·09	110	67	53	52	59	Cloudy
,, 12	30·19	W.	...	114	77	51	52	59	Cloudy
,, 13	30·09	S.W.	...	122	85	59	62	69	Cloudy
,, 14	30·03	S.W.	...	110	85	65	61	69	Hazy
,, 15	29·96	S.W.	...	127	89	65	64	70	Cloudy
,, 16	30·00	N.E.	...	110	77	61	60	68	Fine
,, 17	30·00	N.	...	118	77	58	58	64	Cloudy

During the week marked copies of the following newspapers have been received:—*Western Morning News, Buxton Advertiser, Blackburn Weekly Telegraph, Belfast News Letter, Ipswich Times, Dublin Evening Telegraph, Southampton Echo, Belfast News, Municipal Reformer, Echo, Daily Express, Standard, Bristol Mercury, Windsor and Eton Express, Westminster Gazette, Sunday Times, Derbyshire Times, Lincolnshire Echo, Torquay Directory, Reading Mercury, Herts Advertiser, Times of India, Aberdeen Free Press, Lancashire Post, Plymouth Morning News, Western Mercury, Yorkshire Post, Pioneer Mail, Devon and Exeter Express, Scotsman, Kilburn Times, &c.*

Communications, Letters, &c., have been received from—

A.—Mr. W. H. Allen, Hurst Hill, Bilston; Mr. W. Innes Addison, Glasgow; Ayr County Hospital, Secretary of; Anatomical Society of Great Britain and Ireland, Hon. Secretary of; Mr. W. Allen, Great Bridge, Tipton; Messrs. Armour and Co., Lond.; Dr. C. C. Allison, Omaha, U.S.A.; Messrs. Allen and Hanburys, Lond.; A. T.

B.—M. O. Berthier, Paris; Messrs. Breitkopf and Härtel, Leipzig; *Birmingham Daily Post*; Messrs. Bryce, Son, and Co., Manchester; Major W. J. Buchanan, Calcutta; Dr. J. Bradford, Cambridge; Messrs. Benson and Co., Lond.; Birmingham and Midland Ear, &c., Hospital, Secretary of; Messrs. C. Birchall, Liverpool; Mr. T. Bell, Lancaster; Dr. D. Bower, Bedford; Mr. G. Buist, Cardiff; Mr. F. B. Bond, Bath; Mr. Edgar Beaumont, Lond. Messrs. C. Barker and Sons, Lond.; Dr. A. Bronner, Bradford; Mr. J. E. S. Brown, Kingston-on-Thames; Mr. Blackett, Lond.; Miss M. W. Brown, Lond.; Dr. V. Chastel de Boinville, Liverpool; Mr. Valentine Ball, Lond.; Messrs. J. W. Benson, Lond.; Birmingham, &c., Hospital for Children, Secretary of; Dr. R. Browne, Dinard.

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I.—Ichthyol Co., Lond.

J.—Mr. Henry James, Erdington; Dr. W. M. Middleton Jackson, Grange-over-Sands; Jenner Institute of Preventive Medicine, Lond., Secretary of; J. E.

K.—Dr. Leonard Kidd, Lond.; Messrs. Koidzumi and Co., Kyoto, Japan; Messrs. R. A. Knight and Co., Lond.

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